# Appendix L Cost Estimates



# Lockheed Martin Idaho Technologies Company

# INTERDEPARTMENTAL COMMUNICATION

Date:

January 29, 1999

To:

J F Keck

MS 3625

6-5458

From:

D. T. Peterson

MS 3655

6-2990

Subject: OPERABLE UNIT (OU) 4 – 13 WASTE AREA GROUP (WAG) 4 FEASIBILTIY

STUDY (FS) ALTERNATIVE COST ESTIMATES - CENTRAL FACILITIES

AREA (CFA) 04 - DISPOSAL POND AT CFA 674 - DTP-008-99

Per your request, Cost Estimating has revised the Planning Cost Estimate to reflect the changes in the original and the additional scopes of work for the above-mentioned project. The Total Project Costs (TPC) for each of these alternatives are as follows:

		Net Present	
<u>Alternative</u>	1999 Dollars	Value Dollars	Escalated Dollars
#1 No Action	\$ 1,977,000	\$ 1,110,000	\$ 9,842,000
#2 Institutional	\$ 9,506,000	\$ 4,499,000	\$ 56,955,000
Controls			
#3A Excavate, Treat	\$ 8,394,000	\$ 6,961,000	\$ 18,186,000
& On Site Disposa	al		
#3B Excavate, Treat	\$ 14,761,000	\$ 12,865,000	\$ 25,196,000
& Off Site Dispose	al		
#4 Containment	\$ 13,173,000	\$ 7,992,000	\$ 59,373,000
w/ the ET Type C	ap Cover		

Included for your use is the Cost Estimating Summary and Detail sheets with the cost breakdowns. Also included are the Cost Estimate Recapitulation sheets describing the basis and assumptions used in the development of this estimate. If you have any questions or comments, please do not hesitate to contact me at 526-2990 or E-mail ID DTP.

Attachments

As Stated:

cc: Estimate File #3951 - Rev. D

J. R. Baker Files

#### SUMMARY COST ESTIMATE SHEET

Rev 10-96

1 of 1

Project OU 4-13 Waste Area Group (WAG) 4 FS Cost Estimates Type of Estimate: Planning

File No: 3951 - D

Date: 01/29/99

Prep'd By: J. R. Baker

Central Facilities Area (CFA) - 04: Disposal Pond at CFA 674 Location Idaho National Engineering & Environmental Laboratory (INEEL)

Requester J. F. Keck MS 3625 526-5458

		ALTERNATIVE #1	ALTERNATIVE #2	ALTERNATIVE #3A	ALTERNATIVE #3B	ALTERNATIVE #4	
ACCT.		NO	INSTITUTIONAL	EXCAVATE	EXCAVATE	CONTAINMENT	
NO.	DESCRIPTION	ACTION	CONTROLS	TREAT & ON	TREAT & OFF	w/ ET - TYPE	
				SITE DISPOSAL	SITE DISPOSAL	COVER	
	CAPITAL COST SUBTOTAL	\$1,101,000	\$1,630,016	\$6,037,231	\$10,934,760	\$4,450,500	
	Contingency @ 30%	\$330,300	\$489,005	<b>\$</b> 1,8 <u>1</u> 1,169	\$3,280,428	\$1,335,150	
	TOTAL CAPITAL COST IN FY99 DOLLARS	\$1,431,000	\$2,119,000	\$7,848,000	\$14,215,000	\$5,786,000	
	TOTAL CAPITAL COST IN ESCALATED DOLLARS	\$6,247,000	\$8,317,000	\$14,591,000	\$21,601,000	\$12,152,000	
	TOTAL CAPITAL COST IN NET PRESENT VALUE	\$881,000	\$1,398,000	\$6,732,000	\$12,636,000	\$4,830,000	
	O&M COST SUBTOTAL	\$420,000	\$5,682,000	\$420,000	\$420,000	\$5,682,000	
	Contingency @ 30%	\$126,000	\$1,704,600	\$126,000	\$126,000	\$1,704,600	
	TOTAL O&M COST IN FY99 DOLLARS	\$546,000	\$7,387,000	\$546,000	\$546,000	\$7,387,000	
	TOTAL O&M COST IN ESCALATED DOLLARS	\$3,595,000	\$48,638,000	\$3,595,000	<b>\$</b> 3,595,000	\$47,221,000	
<del></del>	TOTAL O&M COST IN NET PRESENT VALUE	\$229,000	\$3,101,000	\$229,000	\$229,000	\$3,162,000	
	TOTAL PROJECT COST IN FY1999 DOLLARS	\$1,977,000	\$9,506,000	\$8,394,000	\$14,761,000	\$13,173,000	
	TOTAL PROJECT COST IN ESCALATED DOLLARS	\$9,842,000	\$56,955,000	\$18,186,000	\$25,196,000	\$59,373,000	
	TOTAL PROJECT COST IN NET PRESENT VALUE DOLLARS	\$1,110,000	\$4,499,000	\$6,961,000	\$12,865,000	\$7,992,000	

Lockheed Martin Idaho Technologies Company

# COST ESTIMATE SUPPORT DATA RECAPITULATION

Project Title: OU 4-13 (WAG 4) FS Alternative Cost Estimates

D. T. Peterson Estimator: January 29, 1999 Date:

Estimate Type: Planning File:

Approved By:

**SCOPE OF WORK:** Brief description of the proposed project. I.

Provide a Planning Cost Estimate (rough order of magnitude) for comparison of the Waste Area Group (WAG) 4 Central Facilities Area (CFA) Environmental Restoration Feasibility Study. The following alternative scenarios have been selected for the initial evaluation.

WAG 4 - CFA 04: DISPOSAL POND AT CFA 674.

No Action Alternative #1:

**Institutional Controls** Alternative #2:

Excavate, Treat and On Site Disposal Alternative #3A: Excavate, Treat and Off Site Disposal Alternative #3B:

Alternative #4: Containment with the ET Type Cap Cover

Summary costs have been prepared for comparative analyses and are presented in:

1. Current year 1999 dollars.

2. Escalated dollars per DOE published rates.

3. Present net worth dollars, discounting at a rate of 5% as recommended by the EPA under CERCLA guidance.

BASIS OF THE ESTIMATE: Drawings, Design Report, Engineers Notes and/or II. other documentation upon which the estimate is originated.

Discussions with the Requestor (J. F. Keck).

Notegram from the Requestor outlining the preliminary scope, footprint and depth of contamination for this site.

Discussions with vendors currently participating in these types of restoration.

Use of the R. S. Means "Environmental Remediation Cost Data" manuals.

Field observations of current and past INEEL construction projects and practices.

A project site visit.

Continued -

Project Title: OU 4-13 (WAG 4) FS Alternative Cost Estimates

File:

3951-D

Page 2

Practices and techniques used in the development of the previous comparable FS Cost Estimates. These would include but not limited to:

- 1. The estimates generated were performed in conjunction with the editing of the draft FS. Costs were generated and coordinated by cognizant estimators, engineers, and technical personnel.
- 2. Applicable Draft sections and preliminary outlines of FS document.
- 3. Coordination and status meetings with the Environmental Restoration cognizant engineers.
- 4. Area maps of sites from the Geographic Information System (GIS).
- 5. "Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA," Interim Final, published by the EPA for Superfund guidance.
- 6. Conversations with responsible performing organizations, i.e., LMITCO Legal Department (historical permitting/documentation effort), Sample Management Office (historical sampling and analysis requirements and costs), etc.
- 7. Drawings, sketches, flow diagrams generated as a result of the scoping process and cost estimate basis.
- 8. Descriptive makeup of the cap configurations considered for Alternative, sketch of footprint area and perimeter toe area of cap.
- 9. Cost information from Appendix E in "Focused Feasibility Study of Engineered Barriers for Waste Management Units in the 200 Areas," Bechtel Hanford, Inc., DOE/RL-93-33, Rev. 0.
- 10. D&D List, "INEL EM 40/60, RAD Contaminated Surplus Facilities, etc."
- 11. Procurement Fee and General and Administrative (G&A) percentages as prepared by Program Controls and Financial Operations, "Lockheed Idaho Technologies Company FY 1997 Planning Preparation Guidance", dated June 1, 1996, Rev. 0.

III. <u>ASSUMPTIONS</u>: Conditions statements accepted or supposed true without proof of demonstration. An assumption has a direct impact on total estimated cost.

This estimate assumes the following:

This estimate is based upon the activities and quantities stated on each detail sheet. Any variations to these quantities or activities will require adjustments to this estimate.

Continued –

Project Title: OU 4-13 (WAG 4) FS Alternative Cost Estimates

File:

3951-D

Page 3

The Record of Decision will be signed in November of 1999. All Remedial Design and construction activities are assumed to begin in the year 2000. Remedial Action activities vary per alternative and have been escalated to the midpoint of each activity.

INEEL Site Stabilization wages will apply; no overtime or shift differential has been considered for the construction efforts of these estimates.

No provisions were made for an 8-A Set Aside contractor. It is assumed that the job will be competitively bid within the local subcontracting community or accomplished by LMITCO personnel.

FFA/CO management costs encompass management oversight and coordination of initial planning activities, remedial action activity, operations/maintenance, including long term monitoring and institutional controls.

Program management duration was determined by the remedial action activity duration. Average effort was reflected as (1) full-time-equivalent (FTE) for the scheduled duration at a burdened rate of \$125,000 per year per FTE.

Program management involvement for the operation/maintenance period, an average effort of .25 FTE for the scheduled duration at a burdened rate of \$125,000 per year per FTE or \$31,250 per year.

RD/RA documents have been estimated as FFA/CO primary documents for quality, rigor, review and comment resolution. It is assumed that the review and comment resolution will be 50% of the total document costs. Where possible, RD/RA document preparation and program management costs have been based on historical data as per the INEL ER Cost Estimating Guide, Volume II, Environmental Restoration, August 1994.

The capital and O&M activities vary for all options and will start as directed by the responsible ER Program Management personnel. Capital costs will vary from one to three years per option dependent upon the complexity of remedial action activities. Duration of the Operations and Maintenance activity - surveillance and monitoring, is assumed to be 100 years.

Assume that the cost allowance associated with Program Documentation and Permitting will be sufficient to include all sites.

Remedial Design Activities include added institutional controls and a Title Design Construction Document package supporting remedial construction activities:

1. Added Institutional Controls consist of legal and environmental affairs relating to land and deed restrictions at the CFA. It is assumed that all required land and deed

Continued -

Project Title: OU 4-13 (WAG 4) FS Alternative Cost Estimates

File:

3951-D

Page 4

restriction documents exist for all INEEL sites. Costs have been included for five year reviews with the governing bodies and agencies to ensure existing restrictions meet current CERCLA compliance.

2. The Title Design Construction Document package assumes in-house Title I/Title II engineering effort and design document preparation. Costs associated with the Title

Design efforts are based on historical data for construction projects on the INEEL Site. Title Design ranges from 2% to 20% of each construction subcontract depending upon the complexity. It has been assumed that the design required for these alternatives will be of a simplistic nature.

Project/Construction Management activities in support of the remedial action construction is based on historical data for construction projects on the INEEL Site. A percentage of 22.06% of the construction subcontract directs and indirects is reflected.

It is assumed that the costs for minimal operational effort for these items will be covered for a 100 year duration from the signing of the Record of Decision (ROD).

FFA/CO Program Management has been included for an initial one year duration to coordinate with agencies and to oversee the RD/RA document preparation.

Existing Institutional Controls over a 100 year duration include costs minimal passive activities and operational effort for the following items:

- 1. Minimal grounds maintenance and repair including an allowance of material and the labor required for periodic repair of fencing, access roads and signage.
- 2. Caretaker inspection of the area.

Operations Program Management has been included, for a minimal effort, at an average of .25 FTE per year for a 100 year surveillance and monitoring period.

Caretaker responsibilities will include a visual inspection of the physical security provisions (i.e., fencing, roads, signage, etc.), well inspections, coordination of snow removal and general grounds maintenance and upkeep. Minimal hours have been included at an average of .1 FTE per year for the 100 year surveillance and monitoring period.

Additional Institutional Controls consist of legal and environmental affairs relating to land and deed restrictions at the CFA area. It is assumed that all required land and deed restriction documents already exist for the INEEL. Costs have been included for five year reviews with the governing bodies and agencies to evaluate current conditions with CERCLA compliance.

Additional controls may include:

Continued -

Project Title: OU 4-13 (WAG 4) FS Alternative Cost Estimates

File: 3951-D

Page 5

1. Deed/regulatory restrictions limiting land use.

- 2. Soil moisture management and erosion control practice including groundwater drainage control and diversion.
- 3. Limit of access including security, fencing and markers.
- 4. Environmental monitoring (air, soil, and groundwater as indicated).

It has been assumed that all-capping materials (where applicable) are readily available on site in sufficient quantities unless specified and costed in the detail sheets.

It has been assume that the disposal sites "as stated in the estimate", can and will accept the disposal materials.

The sampling of the waste incoming to the repository is assumed to be the responsibility of the waste soils generator.

It was assumed that permitting and legal services were required and costs have been included in these estimates.

It is assumed that personnel will be required to wear minimal personnel protective equipment (booties, gloves, and masks) during all excavation.

Interim weather protection and water runoff control of the contaminated soils disposal at culmination of seasonal fair weather will be handled with a liner or tarp.

Monitoring and Five (5) year WAG reviews will be required for all alternatives as discussed with the Requestor.

RCRA sampling costs were included based on information from LMITCO ER program personnel.

IV. <u>CONTINGENCY GUIDELINE IMPLEMENTATION</u>: The percentage used for contingency as determined by the contingency allowance guidelines can be altered to reflect the type of construction and conditions that may impact the total estimated cost.

Time constraints, completeness of design and accessibility to resources have been taken into consideration in generating the final costs reflected in the accompanying detail sheets. The level of detailed costing and application of contingency have been addressed.

Continued –

Project Title: OU 4-13 (WAG 4) FS Alternative Cost Estimates

File

3951-D

Page 6

Maintaining conformance with standard Environmental Restoration Program Procedure's neither contingency and/or Management Reserve have been included within the body of this estimate. At the final summary level, an average overall project contingency of 30% has been reflected as a separate line item.

Standard Cost Estimating practice for Environmental Projects would recognize contingency within a range of 30% to 50% at this phase of planning. The possibility for changes in scope, selected remedial technology, waste characterization/volume and project definition present risks that need to be considered as potential impacts to the cost of projects at this early stage of scoping.

The 30% contingency was applied to all alternatives in order to maintain consistency for the purposes of comparative analysis only.

# V. OTHER COMMENTS/CONCERNS SPECIFIC TO THE ESTIMATE

Alternatives include an allowance for the General and Administration (G&A) and Procurement Fees on all subcontract work at a rate of 33% for G&A and PIF, and 2.5% for Procurement Fee compounded. No attempt was made at this time to outline a subcontract strategy to determine the number of subcontracts and/or separate procurement subcontracts that may be required during remedial action. As the preferred alternatives are selected and scope/schedule is further defined, costs will be revised.

The cost estimate shows life cycle costs for the WAG site as a stand alone project from signature of the ROD to the dismantlement of the WAG. The estimate is presented in a format consistent with the level of detail and approach for all sites. This format allows the cost estimate to be traceable to previous scope and schedule documentation. It facilitates comparison between other alternatives within the WAG sites and the WAG as a whole. The cost estimate details cost and scope assumptions in (6) RD/RA Area's: Design, Construction, Operations, Facilities Demolition, Surveillance and Monitoring, and Project/Program Management.

#### Lockheed Martin Idaho Technologies Co.

#### SUMMARY OF DETAILED COST ESTIMATE

Rev 10-96

1 of 38 Page

OU 4-13 Waste Area Group (WAG) 4 FS Cost Estimates Project

Type of Estimate: Pianning

File No: 3951 - D

Date: 01/29/99

Prep'd By: J. R. Baker

Central Facilities Area (CFA) - 04: Disposal Pond at CFA 674 Location Idaho National Engineering & Environmental Laboratory (INEEL)

Requester J. F. Keck MS 3625 526-5458

		ALTERNATIVE #1	ALTERNATIVE #2	ALTERNATIVE #3A	ALTERNATIVE #3B	ALTERNATIVE #4	
ACCT.		NO	INSTITUTIONAL	EXCAVATE	EXCAVATE	CONTAINMENT	
NO.	DESCRIPTION	ACTION	CONTROLS	TREAT & ON	TREAT & OFF	w/ ET - TYPE	
				SITE DISPOSAL	SITE DISPOSAL	COVER	· 
ER1220	FFA/CO Management and Oversight						
	Program Management	\$125,000	\$125,000	\$437,500	\$437,500	\$250,000	
	RA Document Preparation					<u></u>	
	RD/RA SOW	\$54,000	\$54,000	\$54,000	\$54,000	\$54,000	
	RA Workplan	\$63,000	\$63,000	\$63,000	\$63,000	\$63,000	
	Packaging, Shipping, Trans. Documentation	N/A	N/A	N/A	\$78,000	N/A	
	Remedial Action Report	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000	
	WAG-Wide RA - 5 Yr. Review For 100 Years	\$811,000	\$811,000	\$811,000	\$811,000	\$780,000	
	RD Documentation Preparation						· · · · ·
	Safety Analysis Documentation (ASA & HSP)	N/A	\$100,500	\$100,500	\$100,500	\$100,500	
	Sampling and Analysis Plan	N/A	N/A	\$108,000	\$108,000	\$108,000	
	Pre-Final Inspection Report	N/A	\$7,500	\$7,500	\$7,500	\$7,500	
ER1210	Remedial Design						
	Added Institutional Controls - 5 Yr. Review For 100 Years	N/A	\$200,000	\$200,000	\$200,000	\$200,000	
	Title Design Construction Document Package	N/A	\$21,000	\$85,000	\$59,500	\$59,500	
ER1230	Remedial Action - Construction Subcontract						
	Site Characterization	N/A	N/A	\$1,394,000	\$1,394,000	\$329,000	
	Construction Subcontract/GFE	N/A	\$172,000	\$2,526,000	\$7,390,000	\$2,108,000	
	Project/Construction Management Allowance	N/A	\$28,016	\$202,731	\$183,760	\$343,000	
	TOTAL CAPITAL COST	\$1,101,000	\$1,630,016	\$6,037,231	\$10,934,760	\$4,450,500	
ER1230	Remedial Action - Operations (100 Year Duration)						
	Program Management	N/A	\$3,385,000	N/A	N/A	\$3,385,000	
	Continued/New Construction CFA Caretaker/Maintenance	N/A	\$1,877,000	N/A	N/A	\$1,877,000	
	Operations, Maintenance, Materials, and Disposal	N/A	N/A	N/A	N/A	N/A	
ER2000	D&D of Facilities	N/A	N/A	N/A	N/A	N/A	
ER1310	Surveillance and Monitoring	\$420,000	\$420,000	\$420,000	\$420,000	\$420,000	
	TOTAL OPERATIONS COST (100 YEARS)	\$420,000	\$5,682,000	\$420,000	\$420,000	\$5,682,000	

### DETAILED COST ESTIMATE (CONT.SHEET)

Page 2 of 38

Project	OU 4-13 Waste	Area Group (W.	AG) 4 FS Cost Estimates

Central Facilities Area (CFA) - 04: Disposal Pond at CFA 674
Alternative #1

Type of Estimate: Planning

File No: 3951 - D

Date: 01/29/99

Alternative #1	Prep a By:	J. H. Baker	
No Action			
			_

ACCT.	DESCRIPTION	QUANTITY	MAT'L ÚT.	LBR/EQP	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	cost	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	FFA/CO Management and Oversight									
	Program Management		<u> </u>							
	Coordination/Oversight of Technical Support	1 person		640	640	75	48,000			48,000
	Coordination with Agency Participants	1 person		320	320	75	24,000			24,000
	Cost and Schedule Control	1 person		320	320	65	20,800			20,800
	Ensure Compliance of Gov't Regulation	1 person		160	160	70	11,200			11,200
	Quarterly and Yearly Reviews	1 person		160	160	65	10,400			10,400
	Audit Preparation and Coordination	1 person		160	160	65	10,400			10,400
	Total Cost (Per Year)									124 <u>,800</u>
	Total Cost (Per Year Rounded)	*								125,000
	Program Management - 1 Year Duration	1 year	125,000				_	125,000		125,000
										· · · · · · · · · · · · · · · · · · ·
	RA Document Preparation	<del></del>	<del></del>							
	RD/RA SOW		<del> </del>		240	75	40.000			18,000
	PreDesign Studies/Preliminary Scoping	3 person	<del> </del>	80		75	18,000 3,000	<del></del>		3,000
	Design Criteria	1 person	<del> </del>	40	40		6,000		<del></del>	6,000
	RD/RA SOW Preparation  Reviews and Comment Resolution	1 person	<del> </del>	80 360	80 360	75 75	27,000			27,000
	RD/RA SOW Cost	1 person	<u> </u>	300	300	/3	27,000			54,000
	numa son cost									34,000
	RA Workpian									
	Preliminary Scoping	1 person		160	160	75	12,000			12,000
	RD/RA SOW Work Plan	1 person	<u> </u>	260	260	75	19,500			19,500
	Reviews and Comment Resolution	1 person		420	420	75	31,500			31,500
	RA Workplan Cost						-			63,000

No Action

Rev 10-96

#### **DETAILED COST ESTIMATE (CONT.SHEET)**

Page 3 of 38

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OU 4-13 Waste Area Group (WAG) 4 FS Cost Estimates

Central Facilities Area (CFA) - 04: Disposal Pond at CFA 674

Alternative #1

Type of Estimate: Planning

File No: 3951 - D

Date: 01/29/99

ACCT.	DESCRIPTION	QUANTITY	MAT'L UT.	LBR/EQP	LBR/EQP	LBR/EQP	LBR/EQP	MATL	OTHER	TOTAL	
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST	
	RA Document Preparation (cont.)		ļ								
	Packaging, Shipping, Transportation Documentation										
	Sampling and Analysis	N/A								N/A	
	Hazard Classification	N/A					·			N/A	
	Selection and Procurement of Packaging	N/A								N/A	
	Reviews and Comment Resolution	N/A								N/A	
	Packaging, Shipping, Transportation Documentation Cost									N/A	
		<u>, , , , , , , , , , , , , , , , , , , </u>									
	Remedial Action Report		<del> </del>		·····	<del> </del>					
	RA Report Preparation	1 person		320	320		24,000			24,000	
	Reviews and Comment Resolution	1 person	ļ	320	320	75	24,000	• •		24,000	
	Remedial Action Report Cost	<u> </u>	ļ							48,000	
	WAG-Wide RA 5 Yr. Review - (Cost Per Each, Required (1/4) FTE For Years 1 thru 5; (1/4) FTE in (5) Yr. Increments for 6 thru 95)										
	5 Year Review Preparation	23 years		350	8,050	75	603,750			604,000	
	Reviews and Comment Resolution	23 years		120	2,760	75	207,000			207,000	
	WAG-Wide RA 5 Yr. Reviews For 100 Years									811,000	
	RD Document Preparation					<del> </del>			+		
	Safety Analysis Documentation (ASA & HSP)	<del>                                     </del>	<del> </del>						-		
	Auditable Safety Analysis/Hazards Classification	N/A				<del> </del>	<del></del>		+	N/A	
	Unresolved Safety Questions	N/A				<del>                                     </del>			<del> </del>	N/A	
	Quality Assurance	N/A	<del>                                     </del>							N/A	
	Reviews and Comment Resolution	N/A				<del>                                     </del>		· · · · · · · · · · · · · · · · · · ·		N/A	
	Safety Analysis Documentation Cost	ļ			 	1				N/A	

### DETAILED COST ESTIMATE (CONT.SHEET)

Page	4 of	38

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OU 4-13 Waste Area Group (WAG) 4 FS Cost Estimates

Central Facilities Area (CFA) - 04: Disposal Pond at CFA 674

Alternative #1 No Action

Type of Estimate: Planning

File No: 3951 - D

Date: 01/29/99

T.	DESCRIPTION	QUANTITY		LBR/EQP		LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
) <u>.                                    </u>		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	Sampling and Analysis Plan								ļ	
	Preliminary Scoping	N/A								N/A
	Field Sampling Plan Preparation	N/A							ļ	N/A
	Reviews and Comment Resolution	N/A								N/A
	Sampling and Analysis Plan Cost								<u> </u>	N/A
			ļ	·					ļ	
	RD Document Preparation (cont.)								-	
	Pre-Final Inspection Report								<b> </b>	
	Checklist Preparation	N/A								N/A
	Reviews and Comment Resolution	N/A								N/A
	Pre-Final Inspection Report Cost									N/A_
	Remedial Design									
	Added Institutional Controls									
	Legal Attorney and Env. Affairs at \$10K ea.	N/A								N/A
	Total Added Institutional Controls - 100 Year Duration									N/A
	Title Design Construction Document Package	N/A								N/A
	Remedial Action								ļ	
	Site Characterization	N/A								N/A
	Construction Subcontract	N/A								N/A
	Project/Construction Management Allowance	N/A								N/A
										_

### DETAILED COST ESTIMATE (CONT.SHEET)

Page 5	of 38
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OU 4-13 Waste Area Group (WAG) 4 FS Cost Estimates

Central Facilities Area (CFA) - 04: Disposal Pond at CFA 674 Alternative #1

No Action

Type of Estimate: Planning

File No: 3951 - D

Date: 01/29/99

ACCT.	DESCRIPTION	QUANTITY	MAT'L UT.	LBR/EQP	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
4.75.87787	Remedial Action - Operations (100 Year Duration)									·
	Program Management									
	Coordination/Oversight of Technical Support	N/A								N/A
	Coordination with Agency Participants	N/A								N/A
	Cost and Schedule Control	N/A								N/A
	Ensure Compliance of Gov't Regulation	N/A								N/A
	Reviews	N/A								N/A
	Audit Preparation and Coordination	N/A								N/A
	Annual Operations and Maintenance Reports	N/A	<u> </u>							N/A
	Total Cost (Per Year)	•								N/A
	Program Management Costs - 100 Year Duration	100 years	N/A							N/A
					:					
	Continued CFA Caretaker/Maintenance									
	Caretaker	N/A								N/A
	Fencing and Fence Maintenance	N/A								N/A
				ļ						
	Continued CFA Caretaker/Maintenance Cost Per Year									N/A
	Caretaker Cost - 100 Year Duration	100 years	N/A							N/A
			<del> </del>							
	Operations, Maintenance, Materials and Disposal	N/A	<del> </del>							N/A
		-	+							
			-							
	D&D of Facilities	N/A								N/A
										· · · · · · · · · · · · · · · · · · ·

No Action

Rev 10-96

# DETAILED COST ESTIMATE (CONT.SHEET)

Page	6 of	38

Project	OU 4-13 Waste Area Group (WAG) 4 FS Cost Estimates

Central Facilities Area (CFA) - 04: Disposal Pond at CFA 674

Alternative #1

Type of Estimate: Planning

File No: 3951 - D

Date: 01/29/99

ACCT.	DESCRIPTION	QUANTITY		LBR/EQP		LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.	1	UNIT			TOTAL HRS	RATE	COST	COST	COST	COST
	Surveillance and Monitoring (annual sampling & monitoring activities	s) - Assumes groundwal	er monitorii	ng is not rec	uired.					
	Ground Water Sampling/Monitoring, Maint. Insp./Report	100 years								N/A
	Gamma Surveys using Hand Held Dectors - 1 per year	100 years		40	4,000	75	300,000			300,000
	5-Year Review Report	20 times	6,000	<u> </u>				120,000		120,000
	note: gamma survey's will be required.									
	Surveillance and Monitoring Costs - 100 Year Duration								•	420,000
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### DETAILED COST ESTIMATE (CONT.SHEET)

Page 7 of 38

Project	OU 4-13 Waste	Area Group (	(WAG) 4 I	FS Cost	Estimates
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Central Facilities Area (CFA) - 04: Disposal Pond at CFA 674

Alternative #2
Institutional Controls

Type of Estimate: Planning File

File No: 3951 - D

Date: 01/29/99

ACCT.	DESCRIPTION	QUANTITY	MATL UT.	LBR/EQP	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	FFA/CO Management and Oversight									
	Program Management									
	Coordination/Oversight of Technical Support	1 person		640	640	75	48,000			48,000
	Coordination with Agency Participants	1 person		320	320	75.	24,000			24,000
	Cost and Schedule Control	1 person		320	320	65	20,800			20,800
	Ensure Compliance of Gov't Regulation	1 person		160	160	70	11,200			11,200
	Quarterly and Yearly Reviews	1 person		160	160	65	10,400			10,400
	Audit Preparation and Coordination	1 person		160	160	65	10,400			10,400
	Total Cost (Per Year)	<u> </u>								124,800
	Total Cost (Per Year Rounded)	^								125,000
	Program Management - 1 Year Duration	1 year	125,000					125,000		125,000
						_				
	RA Document Preparation									
	RD/RA SOW									
	PreDesign Studies/Preliminary Scoping	3 person		80	240	75	18,000			18,000
	Design Criteria	1 person		40	40	75	3,000			3,000
	RD/RA SOW Preparation	1 person		80	80	75	6,000			6,000
	Reviews and Comment Resolution	1 person		360	360	75	27,000			27,000
	RD/RA SOW Cost									54,000
		:								
	RA Workplan									
	Preliminary Scoping	1 person		160	160	75	12,000			12,000
	RD/RA SOW Work Plan	1 person	ļ	260	260	75	19,500			19,500
	Reviews and Comment Resolution	1 person	<u> </u>	420	420	75	31,500			31,500
	RA Workplan Cost									63,000

### DETAILED COST ESTIMATE (CONT.SHEET)

Page	8 of	38

Project	OU 4-13 Waste Area	Group (WAG)	) 4 FS Cost Estimates
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Central Facilities Area (CFA) - 04: Disposal Pond at CFA 674

Alternative #2
Institutional Controls

Type of Estimate: Planning File No: 3951 - D

Date: 01/29/99

ACCT.	DESCRIPTION	QUANTITY	MAT'L UT.	LBR/EQP	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	RA Document Preparation (cont.)									
	Packaging, Shipping, Transportation Documentation								1	
	Sampling and Analysis	N/A								N/A
	Hazard Classification	N/A								N/A
	Selection and Procurement of Packaging	N/A								N/A
	Reviews and Comment Resolution	N/A								N/A
•	Packaging, Shipping, Transportation Documentation Cost									N/A
		<u> </u>	1		 					
	Remedial Action Report							·		
	RA Report Preparation	1 person		320	320	75	24,000			24,000
	Reviews and Comment Resolution	1 person		320	320	75	24,000			24,000
	Remedial Action Report Cost									48,000
									ļi	··· · · · · · · · · · · · · · · · · ·
	WAG-Wide RA 5 Yr. Review - (Cost Per Each, Required (1/4) FTE	 For Years 1 thru 5; (1/4)	FTE in (5) Yr	. Increment	s for 6 thru 9	5)				***
	5 Year Review Preparation	23 years		350	8,050	75	603,750			604,000
	Reviews and Comment Resolution	23 years		120	2,760	75	207,000			207,000
	WAG-Wide RA 5 Yr. Reviews For 100 Years									811,000
			ļ	<u> </u>						
	RD Document Preparation							·		
	Safety Analysis Documentation (ASA & HSP)		1							
	Auditable Safety Analysis/Hazards Classification	2 person	İ	160	320	75	24,000			24,000
	Unresolved Safety Questions	2 person		160	320	75	24,000		1	24,000
	Quality Assurance	1 person	1	30	30	75	2,250			2,250
	Reviews and Comment Resolution	2 person		335	670	75	50,250			50,250
···	Safety Analysis Documentation Cost									100,500
									1	<u> </u>

### DETAILED COST ESTIMATE (CONT.SHEET)

Page	9 of	38
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OU 4-13 Waste Area Group (WAG) 4 FS Cost Estimates	

Central Facilities Area (CFA) - 04: Disposal Pond at CFA 674 Alternative #2

Institutional Controls

Type of Estimate: Planning File No: 3951 - D

Date: 01/29/99

CT.	DESCRIPTION	QUANTITY	MAT'L UT.	LBR/EQP	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
).		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	Sampling and Analysis Plan									
	Preliminary Scoping	N/A				<u>                                     </u>				N/A
	Field Sampling Plan Preparation	N/A								N/A
	Reviews and Comment Resolution	N/A								N/A
	Sampling and Analysis Plan Cost									N/A
						<del> </del>			.	
•	RD Document Preparation (cont.)					<del>                                     </del>				
	Pre-Final Inspection Report	*								
	Checklist Preparation	1 person	ļ	40	40	75	1			3,000
	Reviews and Comment Resolution	1 person		60	60	75	4,500			4,500
	Pre-Final Inspection Report Cost									7,500
		**								
			ļ			-	· • · · ·			
	Remedial Design									
	Added Institutional Controls - 5 Yr. Review of Deed Restrictions with Governing Bodies and Public Comment Over a 100 Year Period; Total of 20 Reviews.									
	Legal Attorney and Env. Affairs at \$10K ea.	20 each	10,000					200,000		200,000
	Total Added Institutional Controls - 100 Year Duration									200,000
	Title Design Construction Document Package									_
_	Remedial Design and Work Plan	1 person		40	40	75	3,000		· •	3,000
	Siting and Surveying	1 lot		20	20	75	1,500			1,500
										.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
	Review and Revise Final Design	3 drwngs	2000					6,000		6,000
	Final Design of Construction Package	3 drwngs	3500					10,500		10,500
	Title Design Construction Document Package									21,000
						;				-

Institutional Controls

#### **DETAILED COST ESTIMATE (CONT.SHEET)**

Page	10	οŧ	38

Project OU 4-13 Waste Area Group (	(WAG	4 FS Cost Estimates
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Central Facilities Area (CFA) - 04: Disposal Pond at CFA 674

Alternative #2

Type of Estimate: Planning File No: 3951 - D

Date: 01/29/99

ACCT.	DESCRIPTION	QUANTITY	MAT'L UT	LBR/EQP	LBR/EQP	LBRVEQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	Remedial Action									
	Site Characterization	N/A								N/A
		<u> </u>								
		<del>-</del>								
	Construction Subcontract - (to begin in the year 2000)									
	Install Perimeter Fencing w/ Gates and Signage	1,700 Inft	20			ļi		34,000		34,000
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						<u> </u>				
		1								
	<u> </u>	<u> </u>								
	Mobilization/Demobilization @ 3% of above construction cost	34,000 const\$	0.03					1,020		1,020
	Training's	5 person		24	120	35	4,200			4,200
	Project Supervision	3 months		170	510	40	20,400			20,400
	Project Support Personnel - Safety & IH	3 months		340	1,020	35	35,700	2.550		35,700
<del>-</del>	Project Booties, Gloves, Masks, Signage, etc	1 lot	2500	<u> </u>				2,500		2,500
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	Construction Subsentines Subtetal this page	1	ļ							07.000
	Construction Subcontract Subtotal this page		L	L						97,820

### DETAILED COST ESTIMATE (CONT.SHEET)

Page 11 of 38

Project	OU 4-13 Waste Area	Group (WAG)	4 FS Cost Estimates

Central Facilities Area (CFA) - 04: Disposal Pond at CFA 674

Alternative #2
Institutional Controls

Type of Estimate: Planning File No: 3951 - D

Date: 01/29/99

ACCT.	DESCRIPTION	QUANTITY		LBR/EQP		LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	Construction Subcontract Subtotal previous page									97,820
	Total Construction Subcontract Direct Cost									98,000
	Construction Subcontract Overhead and Profit @ 30%									29,400
	Total Construction Subcontract Direct and Indirect Cost									127,000
		•								
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	Procurement Fees @ 2.5%									3,175
	G&A and PIF Fee Allowance @ 33%									41,910
	Construction Subcontract & GFE - Total Amount									172,000
										·
	Project/Construction Management Allowance	<u> </u>								
	Project/Construction Management @ 22.06% of Const. Subcontrac	t Cost								28,016
	Project/Construction Management Allowance	<u>"</u>								28,016

Institutional Controls

# DETAILED COST ESTIMATE (CONT.SHEET)

Page	12 (	nf	38
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Project	OU 4-13 Waste Are	a Group (WAG	<ul> <li>4 FS Cost Estimates</li> </ul>

Central Facilities Area (CFA) - 04: Disposal Pond at CFA 674
Alternative #2

Type of Estimate: Planning File No: 3951 - D

Date: 01/29/99

ACCT.	DESCRIPTION	QUANTITY	MAT'L UT.	LBR/EQP	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	Remedial Action - Operations (100 Year Duration)									
	Program Management			į						
	Coordination/Oversight of Technical Support	1 person		200	200	75	15,000			15,000
	Coordination with Agency Participants	1 person		80	80	75	6,000			6,000
	Cost and Schedule Control	1 person		59	59	65	3,848			3,848
	Ensure Compliance of Gov't Regulation	1 person		32	32	70	2,240			2,240
	Reviews	1 person		32	32	65	2,080			2,080
	Audit Preparation and Coordination	1 person		32	32	65	2,080	·		2,080
	Annual Operations and Maintenance Reports	1 person		40	40	65	2,600			2,600
	Total Cost (Per Year)									33,850
	Program Management Costs - 100 Year Duration	100 years	33,850					3,385,000		3,385,000
	Continued CFA Caretaker/Maintenance									
	Caretaker	1 person		188	188	75	14,100			14,100
	Fencing Maintenance	1700 Inft	1					1,700		1,700
	Surface Drainage Maintenance	74,300 sqft	0.04					2,972		2,972
	Continued CFA Caretaker/Maintenance Cost Per Year								·	18,770
	Caretaker Cost - 100 Year Duration	100 years	18,770					1,877,000		1,877,000
•										
	Operations, Maintenance, Materials and Disposal	N/A								N/A
									·	
	D&D of Facilities	N/A								N/A
									ì	

### DETAILED COST ESTIMATE (CONT.SHEET)

Page	13 of	38
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Project	OU 4-13 Waste Area Group (WAG) 4 FS Cost Estimates				
	Central Facilities Area (CFA) - 04: Disposal Pond at CFA 674	Type of Estimate: Planning	File No: 3951 - D	Date:	01/29/99
	Alternative #2			Prep'd By:	J. R. Baker
	Institutional Controls				

ACCT.	DESCRIPTION	QUANTITY	MATL UT.			LBR/EQP	LBR/EQP	MATL	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	Surveillance and Monitoring (annual sampling & monitoring activities)	- Assumes groundwat	er monitorir	ng is not rec	uired.					
	Ground Water Sampling/Monitoring, Maint. Insp./Report	100 years								N/A
	Gamma Surveys using Hand Held Dectors - 1 per year	100 years		40	4,000	75	300,000			300,000
	5-Year Review Report	20 times	6,000					120,000		120,000
	note: gamma survey's will be required.									
	Surveillance and Monitoring Costs - 100 Year Duration									420,000
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#### **DETAILED COST ESTIMATE (CONT.SHEET)**

Page 14 of 38

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4-13 Waste Area Group (WAG) 4 FS Cost Estimates

Central Facilities Area (CFA) - 04: Disposal Pond at CFA 674 Alternative #3A

Excavate, Treatment (Cement Stabilization) & On Site Disposal

Type of Estimate: Planning

File No: 3951 - D

Date: 01/29/99

ACCT.	DESCRIPTION	QUANTITY	MAT'L UT.	LBR/EQP	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	FFA/CO Management and Oversight									
	Program Management									
	Coordination/Oversight of Technical Support	1 person		640	640	75	48,000			48,000
	Coordination with Agency Participants	1 person		320	320	75	24,000			24,000
<u>-</u> -	Cost and Schedule Control	1 person		320	320	65	20,800			20,800
	Ensure Compliance of Gov't Regulation	1 person		160	160	70	11,200			11,200
	Quarterly and Yearly Reviews	1 person		160	160	65	10,400			10,400
	Audit Preparation and Coordination	1 person		160	160	65	10,400			10,400
	Total Cost (Per Year)									124,800
	Total Cost (Per Year Rounded)	•								125,000
	Program Management5 year duration during the design stages,	3.50 year	125,000					437,500		437,500
	a 2 year duration during the construction period and a 1 year duration	after.								
	RA Document Preparation								•	
	RD/RA SOW									
	PreDesign Studies/Preliminary Scoping	3 person		80	240	75	18,000			18,000
	Design Criteria	1 person		40	40	75	3,000		·	3,000
	RD/RA SOW Preparation	1 person		80	80	75	6,000			6,000
	Reviews and Comment Resolution	1 person		360	360	75	27,000			27,000
	RD/RA SOW Cost									54,000
	RA Workplan									
	Preliminary Scoping	1 person	<u> </u>	160	160	75	12,000			12,000
	RD/RA SOW Work Plan	1 person		260	260	75	19,500			19,500
	Reviews and Comment Resolution	1 person		420	420	75	31,500			31,500
	RA Workplan Cost									63,000

### DETAILED COST ESTIMATE (CONT.SHEET)

Page 15 of 38

Project	OU 4-13 Waste	Area Group (	(WAG) 4	FS Cost	Estimates

Central Facilities Area (CFA) - 04: Disposal Pond at CFA 674

Alternative #3A

Excavate, Treatment (Cement Stabilization) & On Site Disposal

Type of Estimate: Planning

File No: 3951 - D

Date: 01/29/99

ACCT.	DESCRIPTION	QUANTITY	MAT'L UT.	LBR/EQP	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	RA Document Preparation (cont.)									
	Packaging, Shipping, Transportation Documentation Cost									
	Sampling and Analysis	N/A								N/A
	Hazard Classification	N/A	<u> </u>							N/A
	Selection and Procurement of Packaging	N/A								N/A
	Reviews and Comment Resolution	N/A								N/A
	Packaging, Shipping, Transportation Documentation Cost									N/A
	Remedial Action Report		<u> </u>						<u> </u>	
	RA Report Preparation	1 person		320	320	75	24,000			24,000
	Reviews and Comment Resolution	1 person		320	320	75	24,000			24,000
	Remedial Action Report Cost		<u> </u>							48,000
				· -						• • • • • • • • • • • • • • • • • • • •
	WAG-Wide RA 5 Yr. Review - (Cost Per Each, Required (1/4) FTE	For Years 1 thru 5; (1/4)	! FTE in (5) Yı	r. Increment	s for 6 thru 9	5)				
	5 Year Review Preparation	23 years		350	8,050	75	603,750			604,000
	Reviews and Comment Resolution	23 years		120	2,760	75	207,000			207,000
	WAG-Wide RA 5 Yr. Reviews For 100 Years		ļ							811,000
	RD Document Preparation									
	Safety Analysis Documentation (ASA & HSP)									*****
	Auditable Safety Analysis/Hazards Classification	2 person		160	320	75	24,000			24,000
	Unresolved Safety Questions	2 person		160	320	75	24,000			24,000
	Quality Assurance	1 person		30	30	75	2,250			2,250
	Reviews and Comment Resolution	2 person		335	670	75	50,250			50,250
	Safety Analysis Documentation Cost									100,500
•										

### **DETAILED COST ESTIMATE (CONT.SHEET)**

Page 16 of 38

Project	OU 4-13 Waste	Area Group (W/	AG) 4 FS Cost	Estimates
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Central Facilities Area (CFA) - 04: Disposal Pond at CFA 674

Alternative #3A

Excavate, Treatment (Cement Stabilization) & On Site Disposal

Type of Estimate: Planning Fi

File No: 3951 - D

Date: 01/29/99

ACCT.	DESCRIPTION	QUANTITY	MAT'L UT.	LBR/EQP	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	Sampling and Analysis Plan									
	Preliminary Scoping	1 person	<u> </u>	320	320	75	24,000			24,000
	Field Sampling Plan Preparation	1 person		400	400	75	30,000			30,000
	Reviews and Comment Resolution	1 person		720	720	75	54,000			54,000
	Sampling and Analysis Plan Cost				,					108,000
	RD Document Preparation (cont.)		ļ			ļļ				
	Pre-Final Inspection Report		<u> </u>							
	Checklist Preparation	1 person		40	40	75	3,000			3,000
	Reviews and Comment Resolution	1 person		60	60	75	4,500			4,500
	Pre-Final Inspection Report Cost									7,500
			Ì							
							·			
	Remedial Design									
	Added Institutional Controls - 5 Yr. Review of Deed Restrictions w	ith Governing Bodies and I	Public Comm	nent Over a	100 Year Pe	riod; Total o	f 20 Reviews.			
	Legal Attorney and Env. Affairs at \$10K ea.	20 each	10,000					200,000		200,000
-	Total Added Institutional Controls - 100 Year Duration									200,000
	Title Design Construction Document Package									
	Remedial Design and Work Plan	1 person		40	40	75	3,000			3,000
	Siting and Surveying	1 lot		20	20	75	1,500			1,500
	Treatment Research and Specification Requirements	1 person		340	340	75	25,500			25,500
	Review and Revise Final Design	10 drwngs	2000					20,000		20,000
	Final Design of Construction Package	10 drwngs	3500					35,000		35,000
	Title Design Construction Document Package									85,000

### **DETAILED COST ESTIMATE (CONT.SHEET)**

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Prolect	OU 4-13 Waste	Area Group (	(WAG) 4 FS Cost Estim	ates
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Central Facilities Area (CFA) - 04: Disposal Pond at CFA 674

Alternative #3A

Excavate, Treatment (Cement Stabilization) & On Site Disposal

Type of Estimate: Planning File

File No: 3951 - D

Date: 01/29/99

ACCT.	DESCRIPTION	QUANTITY	MATLUT	LBR/EQP	LBR/EQP	LBR/EQP	LBR/EQP	MATL	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	Remedial Action -					<u> </u>				
	Site Characterization - Sampling and Analysis		<u> </u>							
	note: given excavation volume = 8,290 cuyds,									
	assuming excavation equals 30 cuyds per hour then 8,290 cuyds/3	30 cuyds per hour = 276	crew hours			<u> </u>				
	276 crew hours / 8 hours per day x 75% efficiency factor = 46 days	/ 20 working days per r	nonth = 2.3 r	nonths.						
	Site Area	74,300 sqft								for information only
	Soit Volume	8,290 cuyd								for information only
	Excavation Duration	9 months								for information only
	SMO - Sample Prep, SOW, Analysis of Data, Tracking, etc	2 year		2,008	4,016	100	401,600			401,600
	Characterization of extent: assume min. of 10 samples per site; max	of 1 sample per 1000 s	oft of site an	эа.						
	Total Hg w/ Prep	74 samples	30					2,229		2,229
	Gamma	74 samples	63					4,681		4,681
	Sample Collection - includes labels, shipping, documentation, etc.	74 samples		0,50	37	50	1,858		· · · · · · · · · · · · · · · · · · ·	1,858
	ICDF Waste Acceptance Criteria (WAC) - 4 samples per site									
	Organic Sampling:									
	VOC 's	4 samples	160					640		640
	SVOC's	4 samples	320					1,280		1,280
	Pesticides	4 samples	120					480		480
	TCLP VOC's	4 samples	150					600		600
	TCLP SVOC's	4 samples	200					800		800
	TCLP Pesticides	4 samples	120					480		480
	TCLP Metals	4 samples	925			<b> </b>		3,700		3,700
	RAD Sampling:		ļ			ļļ				
	Gamma Spec.	4 samples				<b> </b>		252		252
	Gross Alpha	4 samples				ļ		128		128
	Alpha Spec.	4 samples	652					2,608		2,608
	Site Characterization - Sampling and Analysis subtotal this page									421,335

Page 18 of 38 Project OU 4-13 Waste Area Group (WAG) 4 FS Cost Estimates

Central Facilities Area (CFA) - 04: Disposal Pond at CFA 674
Alternative #3A
Excavate, Treatment (Cement Stabilization) & On Site Disposal

Type of Estimate: Planning

File No: 3951 - D

Prep'd By: J. R. Baker Date: 01/29/99

ACCT	DESCRIPTION	QUANTITY	MAT'L ÚT	LBR/EQP		LBR/EQP	LBR/EQP	MATL	OTHER	TOTAL
2 2		TIND	COST	UNIT HRS TOTAL HRS	TOTAL HRS	RATE	COST	ISOS	is CO	1800
	Supplied Supplied Supplies and Apabasis subjects 1997		,							421,335
	Sile Cigiatien and Principle and Principle State of the Company of									
	HAD Sampling cont	solumes 4	, S					340		340
	Beta Analysis	t squipes	3							
	Inorganic Sampling:				<del> </del>			001		120
	Cyanides	4 samples						021		760
	Total Metals	4 samples	8					8		786
	Dron for Total Matale	4 samples	99					264		407
	Crown in the control of the control	4 samples	105					450		450
	Anions	4 samples	50					200		200
	Prep for Anions	ł						72		72
	Hd							120		120
	Total Hq w/ Prep	4 samples	30							00V ZZ
	Sample Collection During Excavation -	9 months		172.00	1.548	8	77,400			004,77
	includes labels, shipping, documentation, etc.									
	Soil Characterization during Excavation @ 1 per 10 cuyd									
	TCI D. Ho	829 each	455					377,195		377,785
	or 11 - 11 - 11 - 11 - 11 - 11 - 11 - 11	1 1 sample per 1000 soft of site area	of site are	a.						
	Office Verification Constituting, assented that the	1	30					2,229		2,229
	total Hg Wi Prep	74 samules						4,681		4,681
	Gamma	201		0.50	42	05	1.858			1,858
	Sample Collection - includes labels, shipping, documentation, etc.	saudus 4/		3	5					
	Cost Manufaction Deced Liver 10% of the Sampling Cost	886,994 sample\$	0.1					669'88		669'88
	Usid Varidation Desert Open 1078 of the Camping Con-	975.693 total\$	0.4283					417,889		417,889
	Cambring (376), Garder (8), The (4.576) (1.576)		L							1,394,000
	Site Characterization - Sampling and Analysis									

### DETAILED COST ESTIMATE (CONT.SHEET)

Page 19	of 38
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roject	OU 4-13 Waste	Area Group (WA	<ol> <li>4 FS Cost Estimates</li> </ol>
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Excavate, Treatment (Cement Stabilization) & On Site Disposal

Central Facilities Area (CFA) - 04: Disposal Pond at CFA 674

Alternative #3A

Type of Estimate: Planning

File No: 3951 - D

Date: 01/29/99

ACCT.	DESCRIPTION	QUANTITY	MAT'L ÚT	LBR/EQP	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	Construction Subcontract - (to begin in the year 2000)									
	Excavation of Soils	8,290 cuyd		0.035	290.15	150	43,523			43,523
	Disposal of Non - Treated Materials in ICDF	625 truckload		3	1,874	55	103,043			103,043
								-		
	Cement Stabilization of RCRA Hazardous Materials	796 cuyd	58					46,168		46,168
		*	-							
	Disposal of Treated Materials in ICDF	133 truckload	<u> </u>	3	398	55	21,890			21,890
	note: treated materials assume a volume increase of 2x									
	Disposal Cost for Stabilized Mat'ls @ the ICDF (see GFE costs)	1,592 cuyd	GFE							
	Note: ref. WAG 3 FS Appendix E									
			ļ				· ·			
ļ	Import and Place Fill Materials to bring pond to grade	27,000 cuyd	10					270,000		270,000
	Revegetate Pond	1 lot	2500					2,500		2,500
	Mobilization/Demobilization @ 3% of above construction cost	487,123 const\$	0.03					14,614		14,614
	Training's	12 person		24	288	35	10,080			10,080
	Project Supervision	10 months	<u> </u>	170	1,700	40	68,000			68,000
	Project Support Personnel - Safety & IH	10 months	2000	340	3,400	35	119,000	8.000		119,000
	Project Booties, Gloves, Masks, Signage, etc	1 lot	8000					8,000		000,8
	Unit prices for the cement stabilization include the loader and forklift	l aquinment etainlace et	eel above ar	ound waste t	uster holding	tank open to	n steel tank cei	i ment and admivi	ture producte	
	mixer, belt feeder, 50 cuyd per hour batch plant, dust collection, pur								idie products.	
<u> </u>	an average price range would be between \$58 and \$128 per cuyd.	npo, maste illikel, Washi	i, screens a	ia labor. Us	mig tile 1330	THOUSE I WILL	January Cost Da	<u>,,,</u>		
	an average price range would be between \$50 and \$120 per cuyu.	·····		,						· · · · · · · · · · · · · · · · · · ·
					-					
	Construction Subcontract Subtotal this page									706,817

#### **DETAILED COST ESTIMATE (CONT.SHEET)**

Page 20 or 3	Page	20	of	34
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roject	OU 4-13 Waste Area Group (WAG) 4 FS Cost Estimates	

Excavate, Treatment (Cement Stabilization) & On Site Disposal

Central Facilities Area (CFA) - 04: Disposal Pond at CFA 674

Alternative #3A

Type of Estimate: Planning

File No: 3951 - D

Date: 01/29/99

ACCT.	DESCRIPTION	QUANTITY	MAT'L ÚT.	1	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	Construction Subcontract Subtotal previous page									706,817
			<del> </del>							
	Total Construction Subcontract Direct Cost		+-	ļ						707,000
	Construction Subcontract Overhead and Profit @ 30%									212,100
	Total Construction Subcontract Direct and Indirect Cost									919,000
	GFE Disposat:									
	Disposal Cost for Stabilized Mat'ls @ the ICDF	1,592 cuyd	104			· · · · · · · · · · · · · · · · · · ·		165,568		165,568
<del></del>	Disposal Cost for Non - Stabilized Mat'ls @ the ICDF	7,494 cuyd	104					779,376		779,376
				<u> </u>						
<b></b>	GFE Disposal Cost									945,000
	Procurement Fees @ 2.5%	<del></del>		<u></u>						46,600
	G&A and PIF Fee Allowance @ 33%			ļ						615,120
	Construction Subcontract & GFE - Total Amount									2,526,000
				<del>                                     </del>						
	D. 1. 100		+							
	Project/Construction Management Allowance Project/Construction Management @ 22.06% of Const. Subcontract	Cost		l	· · · · · · · · · · · · · · · · · · ·					202,731
	Project/Construction Management Allowance	Cour		<u> </u>						202,731
	To observe the management with the state of				<del></del>					
						<b></b>				

## DETAILED COST ESTIMATE (CONT.SHEET)

Page 21 of 34	Page	21	of	3
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OU 4-13 Waste Area Group (WAG) 4 FS Cost Estimates
Central Facilities Area (CFA) - 04: Disposal Pond at CFA 674

Alternative #3A

Excavate, Treatment (Cement Stabilization) & On Site Disposal

Type of Estimate: Planning File I

File No: 3951 - D

Date: 01/29/99

ACCT.	DESCRIPTION	QUANTITY	MAT'L UT.	LBR/EQP	LBR/EQP	LBR/EQP	LBR/EQP	MATL	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	Remedial Action - Operations (100 Year Duration)									
	Program Management									
	Coordination/Oversight of Technical Support	N/A								N/A
	Coordination with Agency Participants	N/A								N/A
	Cost and Schedule Control	N/A								N/A
	Ensure Compliance of Gov't Regulation	N/A								N/A
	Reviews	N/A								N/A
	Audit Preparation and Coordination	N/A								N/A
	Annual Operations and Maintenance Reports	N/A								N/A
	Total Cost (Per Year)	•	<u> </u>							N/A
	Program Management Costs - 100 Year Duration	100 years	N/A							N/A
	Continued CFA Caretaker/Maintenance									
	Caretaker	N/A								N/A
	Fencing Maintenance	N/A								N/A
					<b></b>	!				
	Continued CFA Caretaker/Maintenance Cost Per Year									N/A
	Caretaker Cost - 100 Year Duration	100 years	N/A					<u> </u>		N/A
	Operations, Maintenance, Materials and Disposal	N/A								N/A
·										
	D&D of Facilities	N/A								N/A
		1								
			1							

### DETAILED COST ESTIMATE (CONT.SHEET)

Page	22 of	38
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Project	OU 4-13 Waste Area Group (WAG) 4 FS Cost Estimates					
	Central Facilities Area (CFA) - 04: Disposal Pond at CFA 674	Type of Estimate: Planning	File No: 3951 - D	Date:	01/29/99	
	Alternative #3A			Prep'd By:	J. R. Baker	_
	Excavate, Treatment (Cement Stabilization) & On Site Disposal					

ACCT.	DESCRIPTION	QUANTITY	MAT'L UT.	LBR/EQP	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	Surveillance and Monitoring (annual sampling & monitoring activiti	es) - Assumes groundwat	ter monitoria	ng is not rec	uired.					
	Ground Water Sampling/Monitoring, Maint. Insp./Report	N/A								N/A
	Gamma Surveys using Hand Held Dectors - 1 per year	100 years		40	4,000	75	300,000			300,000
	5-Year Review Report	20 times	6,000					120,000		120,000
	note: gamma survey's will be required.									
	Surveillance and Monitoring Costs - 100 Year Duration									420,000
								1		·
		,						·		
			1							
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DETAILED COST ESTIMATE (CONT.SHEET)

Rev 10-96

Page 23 of 3	aa	23 of	38
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Project	OU 4-13 Waste .	Area Group (WA	G) 4 FS Cost Estimates

Central Facilities Area (CFA) - 04: Disposal Pond at CFA 674

Alternative #3B

Excavate, Off Site Treatment and Disposal

Type of Estimate: Planning

File No: 3951 - D

Date: 01/29/99

ACCT.	DESCRIPTION	QUANTITY	MAT'L UT.	LBR/EQP	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	FFA/CO Management and Oversight									
	Program Management	<u> </u>								
	Coordination/Oversight of Technical Support	1 person		640	640	75	48,000			48,000
	Coordination with Agency Participants	1 person		320	320	75	24,000			24,000
	Cost and Schedule Control	1 person	ļ <u></u> -	320	320	65	20,800			20,800
	Ensure Compliance of Gov't Regulation	1 person		160	160	70	11,200			11,200
	Quarterly and Yearly Reviews	1 person		160	160	65	10,400			10,400
	Audit Preparation and Coordination	1 person	1	160	160	65	10,400			10,400
	Total Cost (Per Year)									124,800
	Total Cost (Per Year Rounded)		<u> </u>							125,000
	Program Management5 year duration during the design stages,	3.50 year	125,000					437,500		437,500
	a 2 year duration during the construction period and a 1 year duration	after.								
	RA Document Preparation		<u> </u>							
	RD/RA SOW							ļ		
	PreDesign Studies/Preliminary Scoping	3 person		80	240	75	18,000			18,000
	Design Criteria	1 person		40	40	75	3,000			3,000
	RD/RA SOW Preparation	1 person		80	80	75	6,000			6,000
	Reviews and Comment Resolution	1 person		360	360	75	27,000			27,000
	RD/RA SOW Cost									54,000
	RA Workplan									
	Preliminary Scoping	1 person		160	160	75	12,000			12,000
	RD/RA SOW Work Plan	1 person		260	260	75	19,500			19,500
			i	420	420	75	31,500			31,500
	Reviews and Comment Resolution	1 person	<u> </u>	440	420	7.5	31,300			31,300

#### DETAILED COST ESTIMATE (CONT.SHEET)

Page	24 of	38
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Project	OLI 4-13 Waste	Area Groun	(WAG) 4 F	3 Cost Estimates
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Excavate, Off Site Treatment and Disposal

Central Facilities Area (CFA) - 04: Disposal Pond at CFA 674
Alternative #3B

Type of Estimate: Planning

File No: 3951 - D

Date: 01/29/99

ACCT.	DESCRIPTION	QUANTITY	MAT'L UT.	LBR/EQP	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.	:	UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	RA Document Preparation (cont.)									
	Packaging, Shipping, Transportation Documentation Cost - one f	or the off site disposal								
	Sampling and Analysis	1 person		240	240	75	18,000			18,000
	Hazard Classification	1 person		200	200	75	15,000			15,000
	Selection and Procurement of Packaging	1 person		80	80	75	6,000			6,000
	Reviews and Comment Resolution	1 person	<u> </u>	520	520	75	39,000			39,000
	Packaging, Shipping, Transportation Documentation Cost									78,000
l			į							
	Remedial Action Report									
	RA Report Preparation	1 person		320	320	75	24,000			24,000
	Reviews and Comment Resolution	1 person		320	320	75	24,000			24,000
•	Remedial Action Report Cost									48,000
	WAG-Wide RA 5 Yr. Review - (Cost Per Each, Required (1/4) FTE	For Years 1 thru 5; (1/4) I	TE in (5) Yr	. Increment	s for 6 thru 9	5)				
	5 Year Review Preparation	23 years		350	8,050	75	603,750			604,000
	Reviews and Comment Resolution	23 years		120	2,760	75	207,000			207,000
	WAG-Wide RA 5 Yr. Reviews For 100 Years									811,000
	RD Document Preparation									
	Safety Analysis Documentation (ASA & HSP)									
	Auditable Safety Analysis/Hazards Classification	2 person		160	320	75	24,000			24,000
	Unresolved Safety Questions	2 person		160	320	75	24,000			24,000
	Quality Assurance	1 person		30	30	75	2,250			2,250
	Reviews and Comment Resolution	2 person		335	670	75	50,250			50,250
	Safety Analysis Documentation Cost									100,500

**DETAILED COST ESTIMATE (CONT.SHEET)** 

10-9

Page 25 of 38

Project	OU 4-13 Waste Area Group (WAG) 4 FS Cost Estimates

Excavate, Off Site Treatment and Disposal

Central Facilities Area (CFA) - 04: Disposal Pond at CFA 674

Alternative #3B

Type of Estimate: Planning

File No: 3951 - D

Date: 01/29/99

CCT.	DESCRIPTION	QUANTITY	MATL UT.	LBR/EQP	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	Sampling and Analysis Plan									
	Preliminary Scoping	1 person		320	320	75	24,000			24,000
	Field Sampling Plan Preparation	1 person		400	400	75	30,000			30,000
	Reviews and Comment Resolution	1 person		720	720	75	54,000			54,000
	Sampling and Analysis Plan Cost								<u>_</u>	108,000
	RD Document Preparation (cont.)									
	Pre-Final Inspection Report									
	Checklist Preparation	1 person		40	40	75	3,000			3,000
	Reviews and Comment Resolution	. 1 person		60	60	75	4,500			4,500
•	Pre-Final Inspection Report Cost		i							7,500
	Remedial Design									
	Added Institutional Controls - 5 Yr. Review of Deed Restrictions	with Governing Bodies and F	ublic Comn	nent Over a	100 Year Pe	riod; Total o	f 20 Reviews.			
	Legal Attorney and Env. Affairs at \$10K ea.	20 each	10,000					200,000		200,000
	Total Added Institutional Controls - 100 Year Duration									200,000
	Title Design Construction Document Package									
	Remedial Design and Work Plan	1 person		40	40	75	3,000			3,000
	Siting and Surveying	1 lot		20	20	75	1,500			1,500
	Review and Revise Final Design	10 drwngs	2000					20,000		20,000
	Final Design of Construction Package	10 drwngs	3500					35,000		35,000
	Title Design Construction Document Package									59,500
						1		}		

#### **DETAILED COST ESTIMATE (CONT.SHEET)**

Page 26 of 38

Project	OU 4-13 Waste	Area Group (\	WAG) 4 FS Cost Estimates

Central Facilities Area (CFA) - 04: Disposal Pond at CFA 674

Alternative #3B

Excavate, Off Site Treatment and Disposal

Type of Estimate: Planning

File No: 3951 - D

Date: 01/29/99

ACCT.	DESCRIPTION	QUANTITY	MAT'L ÚT	LBR/EQP	LBR/EQP	LBR/EQP	LBR/EQP	MATL	OTHER	TOTAL
NO.		ÜNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	Remedial Action -	and last v. New array								
	Site Characterization - Sampling and Analysis									1
	note: given excavation volume = 8,290 cuyds,								·	
	assuming excavation equals 30 cuyds per hour then 8,290 cuyds/5	30 cuyds per hour = 276	crew hours			-				
	276 crew hours / 8 hours per day x 75% efficiency factor = 46 days	/ 20 working days per r	nonth = 2.3 r	nonths.		ļ				
	Site Area	74,300 sqft								for information on
	Soit Volume	8,290 cuyd								for information on
	Excavation Duration	9 months								for information onl
			<b></b>							
	SMO - Sample Prep, SOW, Analysis of Data, Tracking, etc.	2 year		2,008	4,016	100	401,600			401,600
	Characterization of extent: assume min. of 10 samples per site; man	of 1 sample per 1000 s	l .							
	Total Hg w/ Prep	74 samples	30			ļ		2,229		2,229
	Gamma	74 samples	63					4,681		4,68
	Sample Collection - includes labels, shipping, documentation, etc.	74 samples		0.50	37	50	1,858			1,858
		<u> </u>								
	Off Site Soil Respository Waste Acceptance Criteria (WAC) - 4 sam	ples per site								
	Organic Sampling:									
	VOC 's	4 samples	160					640		640
	SVOC's	4 samples	320					1,280		1,280
	Pesticides	4 samples	120					480		480
	TCLP VOC's	4 samples	150					600		600
	TCLP SVOC's	4 samples	200			<b></b>		800		800
	TCLP Pesticides	4 samples	120					480		480
	TCLP Metals	4 samples	925					3,700		3,700
	RAD Sampling:									
	Gamma Spec.	4 samples	63					252		252
	Gross Alpha	4 samples	32					128		128
	Alpha Spec.	4 samples	652					2,608		2,608
	Site Characterization - Sampling and Analysis subtotal this page									421,335

### DETAILED COST ESTIMATE (CONT.SHEET)

Page 27 of 38

Project	OU 4-13 Waste	Area Group (WAG	) 4 FS Cost Estimates

Central Facilities Area (CFA) - 04: Disposal Pond at CFA 674

Alternative #3B

Excavate, Off Site Treatment and Disposal

Type of Estimate: Planning

File No: 3951 - D

Date: 01/29/99

ACCT.	DESCRIPTION	QUANTITY	MAT'L ÚT	LBR/EQP	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	Site Characterization - Sampling and Analysis subtotal previous page									421,335
	RAD Sampling cont									
	Beta Analysis	4 samples	85					340		340
	Inorganic Sampling:									
	Cyanides	4 samples	30					120		120
	Total Metals	4 samples	190					760		760
	Prep for Total Metals	4 samples	66					264		264
	Anions	4 samples	105					420		420
	Prep for Anions	4 samples	50				_	200		200
	рН	4 samples	18					72		72
	Total Hg w/ Prep	4 samples	30					120		120
	Sample Collection During Excavation -	9 months		172.00	1,548	50	77,400			77,400
	includes labels, shipping, documentation, etc.									
	Soil Characterization during Excavation @ 1 per 10 cuyd									
	TCLP - Hg	829 each	455					377,195		377,195
	Site Verification Sampling: assume min. of 3 samples per site; max of 1 sample per 1000 sqft of site area.									
	Total Hg w/ Prep	74 samples	30					2,229		2,229
	Gamma	74 samples	63					4,681		4,681
	Sample Collection - includes labels, shipping, documentation, etc.	74 samples	···	0.50	37	50	1,858			1,858
	Data Validation Based Upon 10% of the Sampling Cost	886,994 sample\$	0.1					88,699		88,699
	Handling (5%), G&A(27%), PIF (4.5%) & Procurment (2.5%)	975,693 total\$	0.4283					417,889		417,889
	Site Characterization - Sampling and Analysis									1,394,000

Rev 10-96

Page	28 o	f 38
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Project	OU 4-13 Waste	Area Group (	(WAG	4 FS Cost Estimates

Central Facilities Area (CFA) - 04: Disposal Pond at CFA 674

Alternative #3B

Excavate, Off Site Treatment and Disposal

Type of Estimate: Planning File

File No: 3951 - D

Date: 01/29/99

ACCT.	DESCRIPTION	QUANTITY	MAT'L UT	LBR/EQP	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	Construction Subcontract - (to begin in the year 2000)									
	Excavation of Soils	8,290 cuyd		0.035	290.15	150	43,523			43,523
	Mobilization of Government Leased 74 cuyd rail gondolas to the	112 railcars	GFE					1		
	INEEL for Shipment of soils.					<u> </u>				
	Load, Ship & Return (railcars) to the an approved	112 railcars	GFE	4	448	150	67,216			67,216
	RCRA Off Site Facility for disposal using 74 cuyd railcars.									
	Treatment and Disposal of Soil - assumed to meet LLW criteria	8,290 cuyd	GFE							
										,
	Import and Place Fill Materials to bring pond to grade	27,000 cuyd	10					270,000		270,000
	Revegetate Pond	1 lot	2500					2,500		2,500
	Mobilization/Demobilization @ 3% of above construction cost	383,239 const\$	0.03					11,497		11,497
	Training's	12 person		24	288	35	10,080			10,080
	Project Supervision	12 months		170	2,040	40	81,600			81,600
	Project Support Personnel - Safety & IH	12 months		340	4,080	35	142,800			142,800
	Project Booties, Gloves, Masks, Signage, etc	1 lot	12000					12,000		12,000
	Construction Subcontract Subtotal this page									641,216

## DETAILED COST ESTIMATE (CONT.SHEET)

Page 29	) O	38
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Project	OU 4-13 Waste	Area Group	(WAG	4 (	FS Cost	Estimates
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Central Facilities Area (CFA) - 04: Disposal Pond at CFA 674 Alternative #3B

Excavate, Off Site Treatment and Disposal

Type of Estimate: Planning File No: 3951 - D

Date: 01/29/99

ACCT.	DESCRIPTION	QUANTITY	1	LBR/EQP	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	cost	COST
	Construction Subcontract Subtotal previous page									641,216
	Total Construction Subcontract Direct Cost	=								641,000
	Construction Subcontract Overhead and Profit @ 30%	-								192,300
	Total Construction Subcontract Direct and Indirect Cost									833,000
			-							
			<del> </del> -							
	GFE Disposal:									
	Mobilization of Government Leased 74 cuyd rail gondolas to the	112 railcars	6000					672,162		672,162
	INEEL for Shipment of soils.									
	Load, Ship & Return (railcars) to the an approved	112 railcars	6000					672,162		672,162
	RCRA Off Site Facility for disposal using 74 cuyd railcars.									
	Treatment and Disposal of Soil	8,290 cuyd	400					3,316,000		3,316,000
	GFE Disposal Cost									4,660,000
	Procurement Fees @ 2.5%									137,325
	G&A and PIF Fee Allowance @ 33%									1,759,614
	Construction Subcontract & GFE - Total Amount						-			7,390,000
<del></del>										
	Project/Construction Management Allowance									
•	Project/Construction Management @ 22.06% of Const. Subcontract	t Cost	<u> </u>							183,760
	Project/Construction Management Allowance									183,760
				L				<u> </u>		<u> </u>

Page 3	0 of 36
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Project	OU 4-13 Waste	Area Group	(WAG) 4	FS Cost	Estimates

Excavate, Off Site Treatment and Disposal

Central Facilities Area (CFA) - 04: Disposal Pond at CFA 674

Alternative #3B

Type of Estimate: Planning File

File No: 3951 - D

Date: 01/29/99

ACCT.	DESCRIPTION	QUANTITY	MAT'L UT.	LBR/EQP	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	Remedial Action - Operations (100 Year Duration)									
	Program Management		<u> </u>							
	Coordination/Oversight of Technical Support	N/A	]							N/A
	Coordination with Agency Participants	N/A								N/A
	Cost and Schedule Control	N/A								N/A
	Ensure Compliance of Gov't Regulation	N/A								N/A
	Reviews	N/A								N/A
	Audit Preparation and Coordination	N/A								N/A
	Annual Operations and Maintenance Reports	N/A								N/A
	Total Cost (Per Year)	^								N/A
	Program Management Costs - 100 Year Duration	100 years	N/A							N/A
•	Continued CFA Caretaker/Maintenance									
	Caretaker	N/A								N/A
	Fencing Maintenance	N/A								N/A
	Continued CFA Caretaker/Maintenance Cost Per Year									N/A
	Caretaker Cost - 100 Year Duration	100 years	N/A							N/A
			<u> </u>							
	Operations, Maintenance, Materials and Disposal	N/A								N/A
									ļ	<u> </u>
						ļ				
	D&D of Facilities	N/A		1						N/A
								<u> </u>		· · · · · · · · · · · · · · · · · · ·
						<u> </u>			<u>                                      </u>	

## DETAILED COST ESTIMATE (CONT.SHEET)

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Page	31 of	38

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Project	OU 4-13 Waste Area Group (WAG) 4 FS Cost Estimates	
	Central Facilities Area (CFA) - 04: Disposal Pond at CFA 674	
	Alternative #3B	

Excavate, Off Site Treatment and Disposal

Type of Estimate: Planning File No: 3951 - D

Date: 01/29/99

ACCT. NO.	DESCRIPTION	QUANTITY		LBR/EQP	LBRVEOP TOTAL HRS	LBR/EQP	LBR/EQP COST	MAT'L COST	OTHER COST	TOTAL COST
NO.	Surveillance and Monitoring (annual sampling & monitoring activity					INTE		0001	0001	0001
	Surveniance and morntoring (arrital sampling & industring activity	RES) - Assumes groundwa	ter mornion	ilg is not rec	uneu.	[				
	Ground Water Sampling/Monitoring, Maint, Insp./Report	N/A	<del> </del>						<del></del>	N/A
	Gamma Surveys using Hand Held Dectors - 1 per year	100 years		40	4,000	75	300,000			300,000
	5-Year Review Report	20 times	6,000					120,000		120,000
	note: gamma survey's will be required.									
-	Surveillance and Monitoring Costs - 100 Year Duration									420,000
								_		
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## DETAILED COST ESTIMATE (CONT.SHEET)

Page 32 of 38

Project	OU 4-13 Waste Area Group (WAG) 4 FS Cost Estimates	
	Central Facilities Area (CFA) - 04: Disposal Pond at CFA 674	

Alternative #4

Containment with ET - Type Cap Cover

Type of Estimate: Planning File No: 3951 - D Date: 01/29/99

ACCT.	DESCRIPTION	QUANTITY	MAT'L ÚT.	LBR/EQP	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	cost	COST	COST
	FFA/CO Management and Oversight									
	Program Management									
	Coordination/Oversight of Technical Support	1 person		640	640	75	48,000			48,000
	Coordination with Agency Participants	1 person		320	320	75	24,000			24,000
	Cost and Schedule Control	1 person	<u> </u>	320	320	65	20,800			20,800
	Ensure Compliance of Gov't Regulation	1 person		160	160	70	11,200			11,200
	Quarterly and Yearly Reviews	1 person		160	160	65	10,400			10,400
	Audit Preparation and Coordination	1 person		160	160	65	10,400			10,400
	Total Cost (Per Year)									124,800
	Total Cost (Per Year Rounded)									125,000
	Program Management5 year duration during the design stages,	2 years	125,000					250,000		250,000
	.5 year duration during the construction period and a 1 year duration	after.								
	RA Document Preparation									
	RD/RA SOW									
	PreDesign Studies/Preliminary Scoping	3 person		80	240	75	18,000			18,000
	Design Criteria	1 person		40	40	75	3,000			3,000
	RD/RA SOW Preparation	1 person		80	80	75	6,000			<u>6,000</u>
-	Reviews and Comment Resolution	1 person		360	360	75	27,000			27,000
	RD/RA SOW Cost									54,000
										·
	RA Workplan									
	Preliminary Scoping	1 person		160	160	75	12,000			12,000
	RD/RA SOW Work Plan	1 person		260	260	75	19,500	•		19,500
	Reviews and Comment Resolution	1 person		420	420	75	31,500	1		31,500
	RA Workplan Cost				.120			<del></del>		63,000
		<del>                                     </del>			-	<del></del>		<del></del>		,000

Containment with ET - Type Cap Cover

## DETAILED COST ESTIMATE (CONT.SHEET)

of	38
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Project	OU 4-13 Waste Area Group (WAG) 4 FS Cost Estimates	
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Central Facilities Area (CFA) - 04: Disposal Pond at CFA 674

Alternative #4

Type of Estimate: Planning

File No: 3951 - D

Date: 01/29/99

CT.	DESCRIPTION	QUANTITY			LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
O.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	RA Document Preparation (cont.)									
	Packaging, Shipping, Transportation Documentation Cost		ļ							
	Sampling and Analysis	N/A								N/A
	Hazard Classification	N/A								N/A
	Selection and Procurement of Packaging	N/A								N/A
	Reviews and Comment Resolution	N/A								N/A
	Packaging, Shipping, Transportation Documentation Cost		<del> </del>							N/A
							_			
	B. and A.	· · · · · · · · · · · · · · · · · · ·	<del> </del>						<u> </u>	
	Remedial Action Report	1 person	<del>                                     </del>	320	320	75	24,000			24,000
	RA Report Preparation  Reviews and Comment Resolution	1 person		320	320	75	24,000			24,000
	- <del></del>	i person	· · · · · · · · · · · · · · · · · · ·	320	320		24,000	··		48,000
	Remedial Action Report Cost		<del> </del>	<del> </del>		<del> </del>				
										· · · · · · · · · · · · · · · · · · ·
	WAG-Wide RA 5 Yr. Review - (Cost Per Each, Required (1/4) FTE	For Years 1 thru 5; (1/4)	FTE in (5) Yr	. Increment	s for 6 thru 9	5)				
	5 Year Review Preparation	23 years		350	8,050	75	603,750			604,000
	Reviews and Comment Resolution	23 years		102	2,346	75	175,950			176,000
	WAG-Wide RA 5 Yr. Reviews For 100 Years									780,000
	RD Document Preparation		ļ						ļ	
	Safety Analysis Documentation (ASA & HSP)			ļ						
	Auditable Safety Analysis/Hazards Classification	2 person		160	320	75	24,000			24,000
	Unresolved Safety Questions	2 person	<u> </u>	160	320	75	24,000			24,000
	Quality Assurance	1 person		30	30	75	2,250		1	2,250
	Reviews and Comment Resolution	2 person		335	670	75	50,250			50,250
	Safety Analysis Documentation Cost						-			100,500

## DETAILED COST ESTIMATE (CONT.SHEET)

Page	34 of	38
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Project	OU 4-13 Waste Area Group (WAG) 4 FS Cost Estimates	

Central Facilities Area (CFA) - 04: Disposal Pond at CFA 674

Alternative #4

Containment with ET - Type Cap Cover

Type of Estimate: Planning File No: 3951 - D

Date: 01/29/99

CCT.	DESCRIPTION	QUANTITY	MAT'L UT.	LBR/EQP	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	Sampling and Analysis Plan									
•	Preliminary Scoping	1 person		320	320	75	24,000			24,000
	Field Sampling Plan Preparation	1 person	İ	400	400	75	30,000			30,000
	Reviews and Comment Resolution	1 person		720	720	75	54,000			54,000
	Sampling and Analysis Plan Cost		<u> </u>							108,000
			<u> </u>							
	RD Document Preparation (cont.)									
	Pre-Final Inspection Report	*				<u> </u>				
	Checklist Preparation	1 person		40	40	75	3,000			3,000
	Reviews and Comment Resolution	1 person		60	60	75	4,500			4,500
	Pre-Final Inspection Report Cost									7,500
										<del></del>
	Remedial Design		1	<u> </u>			:			
	Added Institutional Controls - 5 Yr. Review of Deed Restrictions	with Governing Bodies and	Public Com	nent Over a	100 Year Pe	riod; Total o	f 20 Reviews.		.,	
	Legal Attorney and Env. Affairs at \$10K ea.	2 person		160	100	100	10,000			10,000
	Total Added Institutional Controls - 100 Year Duration	20 each	10,000							200,000
	Title Design Construction Document Package		<u> </u>							
	Remedial Design and Work Plan	1 person		40	40	75	3,000			3,000
	Siting and Surveying	1 lot		20	20	75	1,500			1,500
	Review and Revise Final Design	10 drwngs	2000	)				20,000		20,000
	Final Design of Construction Package	10 drwngs	3500	)				35,000		35,000
	Title Design Construction Document Package									59,500
				<u> </u>						
						[	_			

## DETAILED COST ESTIMATE (CONT.SHEET)

Page 35 of 38

Project	OU 4-13 Waste Area Group (WAG) 4 FS Cost Estimates

Central Facilities Area (CFA) - 04: Disposal Pond at CFA 674

Alternative #4
Containment with ET - Type Cap Cover

Type of Estimate: Planning Fi

File No: 3951 - D

Date: 01/29/99

ACCT.	DESCRIPTION	QUANTITY	MAT'L UT.	LBR/EQP	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	Remedial Action -									
	Site Characterization - Sampling and Analysis									
	SMO - Sample Prep, SOW, Analysis of Data, Tracking, etc.	1 year		2,008	2,008	100	200,800			200,800
	Hg (1 sample per 1000 sqft) Only	74 sample	30					2,220		2,220
	Total Gamma (1 sample per 1000 sqft) Only	74 sample	63	_				4,662		4,662
	Sample Collection - includes labels, shipping, documentation, etc.	74 samples		0.50	37	50	1,850			1,850
	Data Validation Based Upon 10% of the Sampling Cost	209,532 sample\$	0.1					20,953	-	20,953
	Handling (5%), G&A(27%), PIF (4.5%) & Procurment (2.5%)	230,485 total\$	0.4283					98,717		98,717
	Site Characterization - Sampling and Analysis									329,000
	Construction Subcontract - (to begin in the year 2000)									
	Clear and Grub Site	175,000 sqft	0.05					8,750		8,750
	Excavation of Perimeter Gravel Drain System	900 cuyd	8					7,200		7,200
	Install Gravel for Drain	900 cuyd	35					31,500		31,500
	Install Perimeter Drain Piping	1,550 Inft	18					27,900		27,900
	Install Geotextile Layer	9,000 sgyd	9					81,000		81,000
	Import & Place 10' avg. Fill to Level Site - imported mat'ls on INEEL	46,167 cuyd	8					369,336		369,336
	Import & Place 24* Cobble Layer - imported mat'ls from Idaho Falls	7,407 cuyd	25					185,175		185,175
	Import & Place 6" Gravel Layer - imported mat'ls from Idaho Falls	1,852 cuyd	35					64,820		64,820
	Import & Place 4.1' Soil Layer - imported mat'ls on INEEL	15,185 cuyd	8		,			121,480		121,480
	Import & Place 6" Gravel Mulch - imported mat'ls from Idaho Falls	1,852 cuyd	40					74,080		74,080
	Misc. Revegetation & Reclaimation	100,000 sqft	0.05					5,000		5,000
	Install Perimeter Fencing w/ Gates and Signage	1,700 Inft	20					34,000		34,000
	Mobilization/Demobilization <b>②</b> 3% of above construction cost	1,010,241 const\$	0.03					30,307		30,307
	Training's	8 person		24	192	35	6,720			6,720
	Project Supervision	6 months		170	1,020	40	40,800			40,800
	Project Support Personnel - Safety & IH	6 months		340	2,040	35	71,400			71,400
	Construction Subcontract Subtotal this page		<b> </b>							1,159,468

## **DETAILED COST ESTIMATE (CONT.SHEET)**

Page	36 of	38
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OU 4-13 Waste Area Group (WAG) 4 FS Cost Estimates

Central Facilities Area (CFA) - 04: Disposal Pond at CFA 674 Alternative #4

Containment with ET - Type Cap Cover

Type of Estimate: Planning

File No: 3951 - D

Date: 01/29/99

ACCT.	DESCRIPTION	QUANTITY	MAT'L UT.	LBR/EQP	LBR/EQP	LBR/EQP	LBR/EQP	MATL	OTHER	TOTAL
NO.		UNIT	COST		TOTAL HRS	RATE	COST	COST	COST	COST
	Construction Subcontract Subtotal previous page									1,159,468
	Project Booties, Gloves, Masks, Signage, etc	1 lot	5000					5,000		5,000
	Construction Surveying and Staking	2 months		170	340	95	32,300			32,300
	Total Construction Subcontract Direct Cost									1,197,000
	Construction Subcontract Overhead and Profit @ 30%									359,100
	Total Construction Subcontract Direct and Indirect Cost									1,556,000
	Procurement Fees @ 2.5%						·			38,900
	G&A and PIF Fee Allowance @ 33%									513,480
	Construction Subcontract - Total Amount									2,108,000
	'									
	Project/Construction Management Allowance									
	Project/Construction Management @ 22.06% of Const. Subcontrac	t Cost	·				·			343,000
	Project/Construction Management Allowance									343,000
					,		·			
									•	
									•	

Page	37 of	38

Project	OU 4-13 Waste .	Area Group (WAG)	4 FS Cost Estimates

Central Facilities Area (CFA) - 04: Disposal Pond at CFA 674

Alternative #4

Containment with ET - Type Cap Cover

Type of Estimate: Planning

File No: 3951 - D

Date: 01/29/99

CCT.	DESCRIPTION	QUANTITY	MAT'L UT:	LBR/EQP	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
۷Ο.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	Remedial Action - Operations (100 Year Duration)									
	Program Management					<u> </u>				
	Coordination/Oversight of Technical Support	1 person		200	200	75	15,000			15,000
	Coordination with Agency Participants	1 person		80	80	75	6,000			6,000
	Cost and Schedule Control	1 person		59	59	65	3,848			3,848
	Ensure Compliance of Gov't Regulation	1 person	ļ	32	32	70	2,240	i		2,240
	Reviews	1 person		32	32	65	2,080			2,080
	Audit Preparation and Coordination	1 person	ļ.,	32	32	65	2,080			2,080
	Annual Operations and Maintenance Reports	1 person		40	40	65	2,600	i		2,600
	Total Cost (Per Year)	•								33,850
	Program Management Costs - 100 Year Duration	100 years	33,850					3,385,000		3,385,000
	Continued CFA Caretaker/Maintenance									
	Caretaker	1 person		188	188	75	14,100			14,100
	Fencing Maintenance	1700 Inft	1				ļ	1,700		1,700
	Cap Maintenance	74,300 sqft	0.04					2,972		2,972
	Continued CFA Caretaker/Maintenance Cost Per Year									18,770
	Caretaker Cost - 100 Year Duration	100 years	18,770					1,877,000		1,877,000
	Operations, Maintenance, Materials and Disposal	N/A								N/A
	D&D of Facilities	N/A						1		N/A
			1			-				

Alternative #4

Containment with ET - Type Cap Cover

Rev 10-96

## DETAILED COST ESTIMATE (CONT.SHEET)

Page	38 of	38

Project	OU 4-13 Waste Area Group (WAG) 4 FS Cost Estimates
-	Central Facilities Area (CFA) - 04: Disposal Pond at CFA 674

Type of Estimate: Planning

File No: 3951 - D

Date: 01/29/99

ACCT.	DESCRIPTION	QUANTITY		LBR/EQP		LBR/EQP	LBR/EQP	MATL	OTHER	TOTAL
NO.		UNIT			TOTAL HRS	RATE	COST	COST	COST	COST
	Surveillance and Monitoring (annual sampling & monitoring activi	ties) - Assumes groundwat	er monitorii	ng is not rec	uired.					
	Ground Water Sampling/Monitoring, Maint. Insp./Report	N/A								N/A
	Gamma Surveys using Hand Held Dectors - 1 per year	100 years		40	4,000	75	300,000			300,000
	5-Year Review Report	20 times	6,000					120,000		120,000
	note: gamma survey's will be required.									
	Surveillance and Monitoring Costs - 100 Year Duration									420,000
	,									
						-				
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							1			
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# Lockheed Martin Idaho Technologies Company

# INTERDEPARTMENTAL COMMUNICATION

Date:

January 29, 1999

To:

4

J. F. Keck

MS 3625

6-5458

From:

D. T. Peterson

MS 3655

6-2990

Subject: OPERABLE UNIT (OU) 4 – 13 WASTE AREA GROUP (WAG) 4 FEASIBILITY STUDY (FS) ALTERNATIVE COST ESTIMATES - CENTRAL FACILITIES

AREA (CFA) 08 - SEWAGE TREATMENT PLANT DRAINFIELD - DTP-009-99

Per your request, Cost Estimating has revised the Planning Cost Estimate to reflect the changes in the original and the additional scopes of work for the above-mentioned project. The Total Project Costs (TPC) for each of these alternatives are as follows:

		Net Present	
<u>Alternative</u>	1999 Dollars	Value Dollars	Escalated Dollars
		<b>4</b> 1 110 000	<b>A. O. O. I.O. O. O.</b>
#1 No Action	<b>\$</b> 1,9 <b>77</b> ,000	\$ 1,110,000	\$ 9,842,000
#2 Institutional	\$ 10,308,000	\$ 4,860,000	\$ 61,992,000
Controls			
#3A Excavate, Treat	\$ 34,291,000	\$ 30,985,000	\$ 46,691,000
& On Site Disposa	al		
#3B Excavate, Treat	\$ 40,535,000	\$ 36,778,000	\$53,565,000
& Off Site Dispos	al		
#4 Containment	\$ 15,719,000	\$ 9,994,000	\$ 66,298,000
w/ the ET Type C	ap Cover		

Included for your use is the Cost Estimating Summary and Detail sheets with the cost breakdowns. Also included are the Cost Estimate Recapitulation sheets describing the basis and assumptions used in the development of this estimate. If you have any questions or comments, please do not hesitate to contact me at 526-2990 or E-mail ID DTP.

Attachments

As Stated:

cc: Estimate File #3952 - Rev. D

J. R. Baker Files

Lockheed	Martin	idaho	Technolo	gies Co.
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#### **SUMMARY COST ESTIMATE SHEET**

Rev 10-96

Page

OU 4-13 Waste Area Group (WAG) 4 FS Cost Estimates Project

Type of Estimate: 3952-D

Date: 01/29/99

Central Facilities Area (CFA) - 08: Sewage Treatment Plant Drainfield

Prep'd By: J. R. Baker

Location Idaho National Engineering & Environmental Laboratory (INEEL) Checked By:

Requester J. F. Keck MS 3625 526-5458

		ALTERNATIVE #1	ALTERNATIVE #2	ALTERNATIVE #3A	ALTERNATIVE #3B	ALTERNATIVE #4
ACCT.		NO	INSTITUTIONAL	EXCAVATE	EXCAVATE	CONTAINMENT
NO.	DESCRIPTION	ACTION	CONTROLS	TREAT & ON	TREAT & OFF	w/ ET - TYPE
				SITE DISPOSAL	SITE DISPOSAL	COVER
	CAPITAL COST SUBTOTAL	1,101,000	1,663,649	25,957,500	30,760,941	5,826,000
	Contingency @ 30%	\$330,300	\$499,095	\$7,787,250	\$9,228,282	\$1,747,800
	TOTAL CAPITAL COST IN FY99 DOLLARS	\$1,431,000	\$2,163,000	\$33,745,000	\$39,989,000	\$7,574,000
	TOTAL CAPITAL COST IN ESCALATED DOLLARS	\$5,247,000	\$8,364,000	\$43,096,000	\$49,970,000	\$14,232,000
	TOTAL CAPITAL COST IN NET PRESENT VALUE	\$881,000	\$1,440,000	\$30,756,000	\$36,549,000	\$6,508,000
	O&M COST SUBTOTAL	420,000	6,265,000	420,000	420,000	6,265,000
	Contingency @ 30%	\$126,000	\$1,879,500	\$126,000	\$126,000	\$1,879,500
	TOTAL O&M COST IN FY99 DOLLARS	\$546,000	\$8,145,000	\$546,000	\$546,000	\$8,145,000
	TOTAL O&M COST IN ESCALATED DOLLARS	\$3,595,000	\$53,628,000	\$3,595,000	\$3,595,000	\$52,066,000
	TOTAL O&M COST IN NET PRESENT VALUE	\$229,000	\$3,420,000	\$229,000	\$229,000	\$3,486,000
	TOTAL PROJECT COST IN FY1999 DOLLARS	\$1,977,000	\$10,308,000	\$34,291,000	\$40,535,000	\$15,719,000
	TOTAL PROJECT COST IN ESCALATED DOLLARS	\$9,842,000	\$61,992,000	\$46,691,000	\$53,565,000	\$66,298,000
	TOTAL PROJECT COST IN NET PRESENT VALUE DOLLAR	\$1.110.000	\$4,860,000	\$30.985,000	\$36,778,000	\$9,994,000

Lockheed Martin Idaho Technologies Company

# COST ESTIMATE SUPPORT DATA RECAPITULATION

Project Title: OU 4-13 (WAG4) FS Alternative Cost Estimates

Estimator: Date:

D. T. Peterson January 29, 1999

Estimate Type: Planning

File:

3952-D

Approved By:

I. **SCOPE OF WORK:** Brief description of the proposed project.

> Provide a Planning Cost Estimate (rough order of magnitude) for comparison of the Waste Area Group (WAG) 4 Central Facilities Area (CFA) Environmental Restoration Feasibility Study. The following alternative scenarios have been selected for the initial evaluation.

WAG 4 - CFA 08: SEWAGE TREATMENT PLANT DRAINFIELD.

Alternative #1:

No Action

Alternative #2:

**Institutional Controls** 

Alternative #3A: Excavate, Treat and On Site Disposal

Alternative #3B: Excavate, Treat and Off Site Disposal

Alternative #4:

Containment with the ET Type Cap Cover

Summary costs have been prepared for comparative analyses and are presented in:

- 1. Current year 1999 dollars.
- 2. Escalated dollars per DOE published rates.
- 3. Present net worth dollars, discounting at a rate of 5% as recommended by the EPA under CERCLA guidance.
- BASIS OF THE ESTIMATE: Drawings, Design Report, Engineers Notes and/or П. other documentation upon which the estimate is originated.

Discussions with the Requestor (J. F. Keck).

Notegram from the Requestor outlining the preliminary scope, footprint and depth of contamination for this site.

Discussions with vendors currently participating in these types of restoration.

Use of the R. S. Means "Environmental Remediation Cost Data" manuals.

Field observations of current and past INEEL construction projects and practices.

A project site visit.

Continued –

Project Title: OU 4-13 (WAG4) FS Alternative Cost Estimates

File: 3952-D

Page 2

Practices and techniques used in the development of previous comparable FS Cost Estimates. These would include, but not limited to:

- 1. The estimates generated were performed in conjunction with the editing of the draft FS. Costs were generated and coordinated by cognizant estimators, engineers, and technical personnel.
- 2. Applicable Draft sections, and preliminary outlines of FS document.
- 3. Coordination and status meetings with the Environmental Restoration cognizant engineers.
- 4. Area maps of sites from the Geographic Information System (GIS).
- 5. "Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA," Interim Final, published by the EPA for Superfund guidance.
- 6. Conversations with responsible performing organizations, i.e., LMITCO Legal Department (historical permitting/documentation effort), Sample Management Office (historical sampling and analysis requirements and costs), etc.
- 7. Drawings, sketches, flow diagrams generated as a result of the scoping process and cost estimate basis.
- 8. Descriptive makeup of the cap configurations considered for Alternative, sketch of footprint area and perimeter toe area of cap.
- 9. Cost information from Appendix E in "Focused Feasibility Study of Engineered Barriers for Waste Management Units in the 200 Areas," Bechtel Hanford, Inc., DOE/RL-93-33, Rev. 0.
- 10. D&D List, "INEL EM 40/60, RAD Contaminated Surplus Facilities, etc."
- 11. Procurement Fee and General and Administrative (G&A) percentages as prepared by Program Controls and Financial Operations, "Lockheed Idaho Technologies Company FY 1997 Planning Preparation Guidance", dated June 1, 1996, Rev. 0.

III. <u>ASSUMPTIONS</u>: Conditions statements accepted or supposed true without proof of demonstration. An assumption has a direct impact on total estimated cost.

# This estimate assumes the following:

This estimate is based upon the activities and quantities stated on each detail sheet. Any variations to these quantities or activities will require adjustments to this estimate.

Continued –

Project Title: OU 4-13 (WAG4) FS Alternative Cost Estimates

File: 3952-D

Page 3

The Record of Decision will be signed in September of 1999. All Remedial Design and construction activities have been assumed to begin in the year 2000. Remedial Action activities vary per alternative and have been escalated to the midpoint of each activity.

INEEL Site Stabilization wages will apply; no overtime or shift differential has been considered for the construction efforts of these estimates.

No provisions were made for an 8-A Set Aside contractor. It is assumed that the job will be competitively bid within the local subcontracting community or accomplished by LMITCO personnel.

FFA/CO management costs encompass management oversight and coordination of initial planning activities, remedial action activity, operations/maintenance, including long term monitoring and institutional controls.

Program management duration was determined by the remedial action activity duration. Average effort was reflected as (1) full-time-equivalent (FTE) for the scheduled duration at a burdened rate of \$125,000 per year per FTE.

Program management involvement for the operation/maintenance period, an average effort of .25 FTE for the scheduled duration at a burdened rate of \$125,000 per year per FTE or \$31,250 per year.

RD/RA documents have been estimated as FFA/CO primary documents for quality, rigor, review and comment resolution. It is assumed that the review and comment resolution will be 50% of the total document costs. Where possible, RD/RA document preparation and program management costs have been based on historical data as per the INEL ER Cost Estimating Guide, Volume II, Environmental Restoration, August 1994.

The capital and O&M activities vary for all options and will start as directed by the responsible ER Program Management personnel. Capital costs will vary from one to three years per option dependent upon the complexity of remedial action activities. Duration of the Operations and Maintenance activity - surveillance and monitoring, is assumed to be 100 years.

Assume that the cost allowance associated with Program Documentation and Permitting will be sufficient to include all sites.

Remedial Design Activities include added institutional controls and a Title Design Construction Document package supporting remedial construction activities:

1. Added Institutional Controls consist of legal and environmental affairs relating to land and deed restrictions at the CFA. It is assumed that all required land and deed restriction

Continued –

Project Title: OU 4-13 (WAG4) FS Alternative Cost Estimates

File: 3952-D

Page 4

documents exist for all INEEL sites. Costs have been included for five year reviews with the governing bodies and agencies to ensure existing restrictions meet current CERCLA compliance.

2. The Title Design Construction Document package assumes in-house Title I/Title II engineering effort and design document preparation. Costs associated with the Title Design efforts are based on historical data for construction projects on the INEEL Site. Title Design ranges from 2% to 20% of each construction subcontract depending upon the complexity. It has been assumed that the design required for these alternatives will be of a simplistic nature.

Project/Construction Management activities in support of the remedial action construction is based on historical data for construction projects on the INEEL Site. A percentage of 22.06% of the construction subcontract directs and indirects is reflected.

Ground water monitoring will not be required.

It is assumed that the costs for minimal operational effort for these items will be covered for a 100 year duration from the signing of the Record of Decision (ROD).

FFA/CO Program Management has been included for an initial one year duration to coordinate with agencies and to oversee the RD/RA document preparation.

Existing Institutional Controls over a 100 year duration include costs minimal passive activities and operational effort for the following items:

- 1. Minimal grounds maintenance and repair including an allowance of material and the labor required for periodic repair of fencing, access roads and signage.
- 2. Caretaker inspection of the area.

Operations Program Management has been included, for a minimal effort, at an average of .25 FTE per year for a 100 year surveillance and monitoring period.

Caretaker responsibilities will include a visual inspection of the physical security provisions (i.e., fencing, roads, signage, etc.), well inspections, coordination of snow removal and general grounds maintenance and upkeep. Minimal hours have been included at an average of .1 FTE per year for the 100 year surveillance and monitoring period.

Additional Institutional Controls consist of legal and environmental affairs relating to land and deed restrictions at the CFA area. It is assumed that all required land and deed restriction documents already exist for the INEEL. Costs have been included for five year reviews with the governing bodies and agencies to evaluate current conditions with CERCLA compliance.

Additional controls may include:

Continued –

Project Title: OU 4-13 (WAG4) FS Alternative Cost Estimates

File: 3952-D

Page 5

1. Deed/regulatory restrictions limiting land use.

- 2. Soil moisture management and erosion control practice including groundwater drainage control and diversion.
- 3. Limit of access including security, fencing and markers.
- 4. Environmental monitoring (air, soil, and groundwater as indicated).

Material and labor associated with the sample collection have been extrapolated from a current Environmental Management Work Package. An average cost per sample has been assumed for materials and an average labor factor per sample was utilized.

Five year reviews have been included for the 100 year surveillance and monitoring period.

It has been assumed that all capping materials (where applicable) are readily available on site in sufficient quantities unless specified and costed in the detail sheets.

It has been assume that the disposal sites "as stated in the estimate", can and will accept the disposal materials.

The sampling of the waste incoming to the repository is assumed to be the responsibility of the waste soils generator.

It was assumed that permitting and legal services were required and costs have been included in these estimates.

It is assumed that personnel will be required to wear minimal personnel protective equipment (booties, gloves, and masks) during all excavation.

Interim weather protection and water runoff control of the contaminated soils disposal at culmination of seasonal fair weather will be handled with a liner or tarp.

Monitoring and Five (5) year WAG reviews will be required for all alternatives as discussed with Requestor.

RCRA sampling costs were included based on information from LMITCO ER program personnel.

IV. <u>CONTINGENCY GUIDELINE IMPLEMENTATION</u>: The percentage used for contingency as determined by the contingency allowance guidelines can be altered to reflect the type of construction and conditions that may impact the total estimated cost.

Continued –

Project Title: OU 4-13 (WAG4) FS Alternative Cost Estimates

File:

3952-D

Page 6

Time constraints, completeness of design and accessibility to resources have been taken into consideration in generating the final costs reflected in the accompanying detail sheets. The level of detailed costing and application of contingency have been addressed.

Maintaining conformance with standard Environmental Restoration Program Procedure's neither contingency and/or Management Reserve have been included within the body of this estimate. At the final summary level, an average overall project contingency of 30% has been reflected as a separate line item.

Standard Cost Estimating practice for Environmental Projects would recognize contingency within a range of 30% to 50% at this phase of planning. The possibility for changes in scope, selected remedial technology, waste characterization/volume and project definition present risks that need to be considered as potential impacts to the cost of projects at this early stage of scoping.

The 30% contingency was applied to all alternatives in order to maintain consistency for the purposes of comparative analysis only.

## V. OTHER COMMENTS/CONCERNS SPECIFIC TO THE ESTIMATE

Alternatives include an allowance for the General and Administration (G&A) and Procurement Fees on all subcontract work at a rate of 33% for G&A and PIF, and 2.5% for Procurement Fee compounded. No attempt was made at this time to outline a subcontract strategy to determine the number of subcontracts and/or separate procurement subcontracts that may be required during remedial action. As the preferred alternatives are selected and scope/schedule is further defined, costs will be revised.

The cost estimate shows life cycle costs for the WAG site as a stand alone project from signature of the ROD to the dismantlement of the WAG. The estimate is presented in a format consistent with the level of detail and approach for all sites. This format allows the cost estimate to be traceable to previous scope and schedule documentation. It facilitates comparison between other alternatives within the WAG sites and the WAG as a whole. The cost estimate details cost and scope assumptions in (6) RD/RA Area's: Design, Construction, Operations, Facilities Demolition, Surveillance and Monitoring, and Project/Program Management.

#### Lockheed Martin Idaho Technologies Co.

## SUMMARY OF DETAILED COST ESTIMATE

Rev 10-96

Page 1 of 38

Project OU 4-13 Waste Area Group (WAG) 4 FS Cost Estimates

\_\_ Type of Estimate: 3952-D

Date: 01/29/99

Central Facilities Area (CFA) - 08: Sewage Treatment Plant Drainfield

Location Idaho National Engineering & Environmental Laboratory (INEEL)

Requester J. F. Keck MS 3625 526-5458

		ALTERNATIVE #1	ALTERNATIVE #2	ALTERNATIVE #3A-	ALTERNATIVE #3B	ALTERNATIVE #4
ACCT.		NO	INSTITUTIONAL	EXCAVATÉ	EXCAVATE	CONTAINMENT
NO.	DESCRIPTION	ACTION	CONTROLS	TREAT & ON	TREAT & OFF	w/ ET - TYPE
				SITE DISPOSAL	SITE DISPOSAL	COVER
ER1220	FFA/CO Management and Oversight					
	Program Management	\$125,000	\$125,000	\$437,500	\$437,500	\$312,50
	RA Document Preparation					
	RD/RA SOW	\$54,000	\$54,000	\$54,000	\$54,000	\$54,00
	RA Workplan	\$63,000	\$63,000	\$63,000	\$63,000	\$63,00
	Packaging, Shipping, Tran. Documentation	N/A	N/A	N/A	\$78,000	N/A
	Remedial Action Report	\$48,000	\$48,000	\$48,000	\$48,000	\$48,00
	WAG-Wide RA - 5 Yr. Review For 100 Years	\$811,000	\$811,000	\$811,000	\$811,000	\$811,00
	RD Documentation Preparation					·
	Safety Analysis Documentation (ASA & HSP)	N/A	\$100,500	\$100,500	\$100,500	\$100,50
	Sampling and Analysis Plan	N/A	N/A	\$108,000	\$108,000	\$108,00
	Pre-Final Inspection Report	N/A	\$7,500	\$7,500	\$7,500	\$7,50
ER1210	Remediai Design					
	Added Institutional Controls - 5 Yr. Review For 100 Years	N/A	\$200,000	\$200,000	\$200,000	\$200,00
	Title Design Construction Document Package	N/A	\$21,000	\$85,000	\$85,000	\$59,50
ER1230	Remedial Action - Construction Subcontract					
	Site Characterization	N/A	N/A	\$1,539,000	\$1,539,000	\$248,00
,	Construction Subcontract/GFE	N/A	\$201,000	\$19,499,000	\$24,207,000	\$3,280,00
	Project/Construction Management Allowance	N/A	\$32,649	\$3,005,000	\$3,022,441	\$534,00
	TOTAL CAPITAL COST	\$1,101,000	\$1,663,649	\$25,957,500	\$30,760,941	\$5,826,00
ER1230	Remedial Action - Operations (100 Year Duration)					
	Program Management	N/A	\$3,385,000	N/A	N/A	\$3,385,00
	Continued/New Construction CFA Caretaker/Maintenance	N/A	\$2,460,000	N/A	N/A	\$2,460,00
	Operations, Maintenance, Materials, and Disposal	N/A	N/A	N/A	N/A	N/A
ER2000	D&D of Facilities	N/A	N/A	N/A	N/A	N/A
ER1310	Surveillance and Monitoring	\$420,000	\$420,000	\$420,000	\$420,000	\$420,00
	TOTAL OPERATIONS COST (100 YEARS)	\$420,000	\$6,265,000	\$420,000	\$420,000	\$6,265,00

#### **DETAILED COST ESTIMATE (CONT.SHEET)**

Page 2 of 38

Project OU 4-13 Waste Area Group (WAG) 4 FS Cost Estimates

Central Facilities Area (CFA) - 08: Sewage Treatment Plant Drainfield

Alternative #1

No Action

Type of Estimate: Planning

File No: 3952-D

Date: 01/29/99

ACCT.	DESCRIPTION	QUANTITY	MAT'L UT.	LBR/EQP	LBR/EQP	LBRVEQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	FFA/CO Management and Oversight									· · · · · · · · · · · · · · · · · · ·
	Program Management									
	Coordination/Oversight of Technical Support	1 person		640	640	75	48,000			48,000
	Coordination with Agency Participants	1 person		320	320	75	24,000			24,000
	Cost and Schedule Control	1 person		320	320	65	20,800			20,800
	Ensure Compliance of Gov't Regulation	1 person		160	160	70	11,200			11,200
	Quarterly and Yearly Reviews	1 person		160	160	65	10,400			10,400
	Audit Preparation and Coordination	1 person		160	160	65	10,400			10,400
	Total Cost (Per Year)									124,800
	Total Cost (Per Year Rounded)									125,000
	Program Management - 1 Year Duration	1 year	125,000					125,000		125,000
			<b>'</b>							
	RA Document Preparation									
	RD/RA SOW									
	PreDesign Studies/Preliminary Scoping	3 person		80	240	75	18,000			18,000
	Design Criteria	1 person		40	40	75	3,000			3,000
	RD/RA SOW Preparation	1 person		80	80	75	6,000			6,000
	Reviews and Comment Resolution	1 person		360	360	75	27,000			27,000
	RD/RA SOW Cost									54,000
			l				į			
	RA Workplan									
	Pretiminary Scoping	1 person		160	160	75	12,000			12,000
	RD/RA SOW Work Plan	1 person		260	260	75	19,500			19,500
	Reviews and Comment Resolution	1 person		420	420	75	31,500			31,500
	RA Workplan Cost									63,000
										,

Alternative #1
No Action

DETAILED COST ESTIMATE (CONT.SHEET)

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Page	3 of	38

Page	J	OI	30
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Rev 10-96

OU 4-13 Waste Area Group (WAG) 4 FS Cost Estimates	_
Central Facilities Area (CFA) - 08: Sewage Treatment Plant Drainfield	

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Type of Estimate: Planning

File No: 3952-D

Date: 01/29/99

ACCT.	DESCRIPTION	QUANTITY		LBR/EQP,		LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	RA Document Preparation (cont.)								ļ	
	Packaging, Shipping, Transportation Documentation								ļ	
	Sampling and Analysis	N/A								N/A
	Hazard Classification	N/A								N/A
	Selection and Procurement of Packaging	N/A	L							N/A
	Reviews and Comment Resolution	N/A								N/A
	Packaging, Shipping, Transportation Documentation Cost					<u></u>			-	N/A
	Remedial Action Report									
	RA Report Preparation	1 person		320	320	75	24,000			24,000
	Reviews and Comment Resolution	1 person		320	320	75	24,000			24,00
	Remedial Action Report Cost				ļ					48,000
	WAG-Wide RA 5 Yr. Review - (Cost Per Each, Required (1/4) FTE	For Years 1 thru 5; (1/4) F	FE in (5) Yr.			}				
	5 Year Review Preparation	23 years		350	8,050	75	603,750			604,000
	Reviews and Comment Resolution	23 years		120	2,760	75	207,000			207,000
	WAG-Wide RA 5 Yr. Reviews For 100 Years									811,000
	RD Document Preparation									
	Safety Analysis Documentation (ASA & HSP)									
	Auditable Safety Analysis/Hazards Classification	N/A							ļ <u> </u>	N/A
	Unresolved Safety Questions	N/A				<u> </u>				N/A
	Quality Assurance	N/A								N/A
	Reviews and Comment Resolution	N/A							ļļ.	N/A
	Reviews and Comment Resolution									N/A

Alternative #1
No Action

Rev 10-96

## DETAILED COST ESTIMATE (CONT.SHEET)

P	age	4 of	3

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OU 4-13 Waste Area Group (WAG) 4 FS Cost Estimates	 
Central Facilities Area (CFA) - 08: Sewage Treatment Plant Drainfield	

Treatment Plant Drainfield

Type of Estimate: Planning File No:

File No: 3952-D

Date: 01/29/99

ACCT.	DESCRIPTION	QUANTITY	MAT'L UT.	LBR/EQP	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	Sampling and Analysis Plan					<u> </u>				
	Preliminary Scoping	N/A								N/A
	Field Sampling Plan Preparation	N/A			<u></u>	<u> </u>		<u> </u>		N/A
	Reviews and Comment Resolution	N/A								N/A
	Sampling and Analysis Plan Cost									N/A
					<u> </u>					
	j									
	RD Document Preparation (cont.)			<u> </u>						
	Pre-Final Inspection Report							<u> </u>		
	Checklist Preparation	N/A							<u> </u>	N/A
	Reviews and Comment Resolution	N/A	1	<u></u>					ļ	N/A
	Pre-Final Inspection Report Cost									N/A
			[							
	Remedial Design									
	Added Institutional Controls									
	Legal Attorney and Env. Affairs at \$32K ea.	N/A								N/A
	Total Added Institutional Controls - 100 Year Duration									N/A
	Title Design Construction Document Package	N/A								N/A
	Remedial Action									
	Site Characterization	N/A								N/A
	Construction Subcontract	N/A								N/A
	Project/Construction Management Allowance	N/A								N/A

## DETAILED COST ESTIMATE (CONT.SHEET)

Page 5 of 38

Project OU 4-13 Waste Area Group (WAG) 4 FS Cost Estimates

Central Facilities Area (CFA) - 08: Sewage Treatment Plant Drainfield

Alternative #1

No Action

Type of Estimate: Planning File No: 3952-D

Date: 01/29/99

ACCT.	DESCRIPTION	QUANTITY		LBR/EQP	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	Remedial Action - Operations (100 Year Duration)									
	Program Management			ļ						
	Coordination/Oversight of Technical Support	N/A		1				1		N/A
	Coordination with Agency Participants	N/A						ļ <u></u>		N/A
	Cost and Schedule Control	N/A								N/A
	Ensure Compliance of Gov't Regulation	N/A								N/A
	Reviews	N/A								N/A
	Audit Preparation and Coordination	N/A								N/A
	Annual Operations and Maintenance Reports	N/A								N/A
	Total Cost (Per Year)									N/A
	Program Management Costs - 100 Year Duration	100 years	N/A	ļ	,					N/A
			_1							
				<u> </u>						
	Continued CFA Caretaker/Maintenance		ľ							·
	Caretaker	N/A								N/A
	Fencing and Fence Maintenance	N/A								N/A
	Continued CFA Caretaker/Maintenance Cost Per Year									N/A
	Caretaker Cost - 100 Year Duration	100 years	N/A							N/A
	Operations, Maintenance, Materials and Disposal	N/A								N/A
	D&D of Facilities	N/A								N/A

No Action

DETAILED COST ESTIMATE (CONT.SHEET)

Page	6 of	38
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Rev 10-96

Project	OU 4-13 Waste	Area Group (WAG) 4	FS Cost Estimates

Central Facilities Area (CFA) - 08: Sewage Treatment Plant Drainfield

Alternative #1

Type of Estimate: Planning

File No: 3952-D

Date: 01/29/99

ACCT.	DESCRIPTION	QUANTITY	MAT'L UT.		LBR/EQP	LBR/EQP RATE	LBR/EQP COST	MAT'L COST	OTHER COST	TOTAL COST
NO.		UNIT	COST		TOTAL HRS	HAIE	COST	cosi	COSI	CO31
	Surveillance and Monitoring (annual sampling & monitoring activiti	es) - Assumes groundwate	er monitoring	g will not be	required.			<del></del>	··· 1	
			<del>                                     </del>	<del> </del>		1				
	Ground Water Sampling/Monitoring, Maint. Insp./Report	100 years		ļ —						N/A
	Gamma Surveys using Hand Held Detectors - 1 per year	100 years	<del>-</del>	40	4,000	75	300,000			300,000
	5-Year Review Report	20 times	6,000	ļ				120,000		120,000
0.00	note: gamma survey's will be required.		<u> </u>							
	Surveillance and Monitoring Costs - 100 Year Duration									420,000
	*****									
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Lockheed Martin Idaho Technologies Co.

Rev 10-96

DETAILED COST ESTIMATE (CONT.SHEET)

Page 7 of 38
Project OU 4-13 v

Central Facilities Area (CFA) - 08: Sewage Treatment Plant Drainfield OU 4-13 Waste Area Group (WAG) 4 FS Cost Estimates

Alternative #2 Institutional Controls

Type of Estimate: Planning

File No: 3952-D

Prep'd By: J. R. Baker Date: 01/29/99

and Oversight         UNIT         COST         UNIT         HSI TOTAL HRST         HATE         COST         CO	ACCT. DESCRIPTION	QUANTITY	MAT'L UT.		LBR/EQP	LBR/EQP	LBR/EQP	MATIL	OTHER	TOTAL
initial Support         1 person         640         640         75         48,000           olpanis         1 person         320         320         75         24,000           aguation         1 person         160         160         11,200           eiton         1 person         160         160         65         10,400           eiton         1 person         160         160         65         10,400           eiton         1 person         160         160         125,000         1           scoping         3 person         80         240         75         16,000         1           dion         1 person         80         240         75         27,000         1           dion         1 person         360         360         75         27,000         1           dion         1 person         260         260         75         12,000         1           dion         1 person         360         360         75         27,000         1           dion         1 person         420         75         12,000         1           dion         1 person         260         260         75		TNO	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
geory Participants         1 person         640         640         77         48,000           geory Participants         1 person         320         320         75         24,000           Control Country Participants         1 person         160         160         70         11,200           Country Regulation         1 person         160         160         70         11,200           At Coordination         1 person         160         160         65         10,400           At Coordination         1 person         160         160         65         10,400           At Coordination         1 person         80         240         75         10,400           At Coordination         1 person         80         240         75         10,000           At Coordination         1 person         80         240         75         10,000           At Coordination         1 person         150         75         12,000           At Coordination         1 person         160         75         12,000           At Coordination         1 person         160         75         12,000           At Coordination         1 person         160         75 <th< td=""><td>FFA/CO Management and Oversight</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>	FFA/CO Management and Oversight									
gain of Technical Support         1 person         640         640         75         48,000           pain of Technical Support         1 person         320         320         320         24,000           pain of Gov/frequency         1 person         160         160         70         11,200         71,200           f Reviews         1 person         160         160         160         70         11,200         71,100           f Reviews         1 person         160         160         160         160         10,400         11,100           f Reviews         1 person         1 person         160         160         160         160         10,400         11,100           f cert Duration         1 person         1 person         160         16	Program Management									
gency Participants         1 person         320         320         75         24,000           Control         1 person         1 person         160         70         11,200           of Gov/T Regulation         1 person         160         160         70         10,400           of Gov/T Regulation         1 person         160         160         76         10,400           of Coordination         1 person         1 person         160         160         160         10,400           rear Duration         1 person         1 person         40         240         75         18,000           rear Duration         1 person         80         240         75         18,000         75           retinion by Scoping         3 person         80         240         75         18,000         75           retinion by Scoping         1 person         360         75         27,000         75         18,000           retinion by Scoping         1 person         360         75         27,000         75         12,000           retinion by Scoping         1 person         1 person <td>Coordination/Oversight of Technical Support</td> <td>1 person</td> <td></td> <td>640</td> <td>640</td> <td>75</td> <td>48,000</td> <td></td> <td></td> <td>48,000</td>	Coordination/Oversight of Technical Support	1 person		640	640	75	48,000			48,000
Control         1 person         320         320         65         20,800           of Gearl Regulation         1 person         160         160         65         11,200           A Deviews         1 person         160         160         65         10,400         1           Andersillon         1 person         160         160         65         10,400         1           Indexel         1 person         1 person         160         160         65         10,400         1           Indexel         1 person         1 person         2 person <th< td=""><td>Coordination with Agency Participants</td><td>1 person</td><td></td><td>320</td><td>320</td><td>75</td><td>24,000</td><td></td><td></td><td>24,000</td></th<>	Coordination with Agency Participants	1 person		320	320	75	24,000			24,000
Revelense         1 person         160         160         70         11,200           Revelense         1 person         160         160         65         10,400         10           Indeciple         1 person         1 person         1 person         1 person         1 person         1 person           rear Duration         1 person         1 person         2 person <t< td=""><td>Cost and Schedule Control</td><td>1 person</td><td></td><td>320</td><td>320</td><td>65</td><td>20,800</td><td></td><td></td><td>20,800</td></t<>	Cost and Schedule Control	1 person		320	320	65	20,800			20,800
of Designation         1 person         160         160         65         10,400         1           naded         Indexendention         1 person         160         160         65         10,400         1           rear Duration         1 year         125,000         1         1         1         1           rear Duration         3 person         80         240         75         3,000         1           real minerary Scoping         3 person         40         75         3,000         1           real minerary Scoping         3 person         40         75         27,000         1           real minerary Scoping         3 person         360         360         75         27,000         1           real minerary Scoping         3 person         40         75         27,000         1         1           real minerary Scoping         3 person         360         360         75         27,000         1           real minerary Scoping         1 person         1 person         2 person         2 person         2 person         2 person         2 person         2 person         2 person         2 person         2 person         2 person         2 person         2 person	Ensure Compliance of Gov't Regulation	1 person		160	160	70	11,200			11,200
nd Coordination         1 person         160         160         65         10,400         1           randed)         Index)         125,000         125,000         125,000         1           real Duration         1 year         125,000         125,000         1           realiminary Scoping         3 person         80         240         75         3,000           realiminary Scoping         1 person         80         80         75         6,000         8           realiminary Scoping         1 person         80         80         75         6,000         8           realiminary Scoping         1 person         80         80         75         6,000         8           realiminary Scoping         1 person         80         80         75         6,000         8           realiminary Scoping         1 person         80         80         75         6,000         8           realiminary Scoping         1 person	Quarterly and Yearly Reviews	1 person		160	160	65	10,400			10,400
rear Duration         1 year         125,000         1 year         125,000	Audit Preparation and Coordination	1 person		160	160	65	10,400			10,400
rear Duration         1 year         125,000         125,000         125,000           rear Duration         1 yearson         80         240         75         18,000         18,000           realion         1 person         40         40         75         18,000	Total Cost (Per Year)									124,800
rear Duration         1 year         125,000         1           rear Duration         1 year         125,000         125,000           reliminary Scoping         3 person         80         240         75         16,000           resion         1 person         80         80         75         5,000           nert Resolution         1 person         360         75         27,000         75           resion         1 person         80         80         75         27,000         75           resion         1 person         1 person <td>Total Cost (Per Year Rounded)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>125,000</td>	Total Cost (Per Year Rounded)									125,000
Preliminary Scoping         3 person         80         240         75         18,000           ration         1 person         40         40         75         3,000           nert Resolution         1 person         360         75         27,000           nert Resolution         1 person         1 person         1 person           nert Resolution         1 person         1 person         1 person           nert Resolution         1 person         1 person         1 person	Program Management - 1 Year Duration	1 year	125,000					125,000		125,000
Preliminary Scoping         3 person         80         240         75         18,000           ration         1 person         40         40         75         3,000           rent Resolution         1 person         80         75         27,000           rent Resolution         1 person         160         160         75         12,000           rent Resolution         1 person         420         260         260         75         12,000           rent Resolution         1 person         420         420         75         31,500										
Preliminary Scoping         3 person         80         240         75         18,000           ration         1 person         40         40         75         3,000           rent Resolution         1 person         360         360         75         27,000           rent Resolution         1 person         160         160         160         75         12,000           rent Resolution         1 person         420         75         12,000         80		-								
1 Studies/Preliminary Sopping         3 person         80         240         75         18,000           OW Preparation         1 person         40         40         75         3,000           OW Preparation         1 person         80         80         75         6,000           and Comment Resolution         1 person         360         75         27,000         27,000           cost         1 person         1 pe	RA Document Preparation									
1 Studies/Preliminary Scoping         3 person         80         240         75         18,000           Iteria         1 person         40         75         3,000         3,000           OW Preparation         1 person         80         80         75         6,000           And Comment Resolution         1 person         360         75         27,000           Associng         1 person         160         75         12,000           Associng         1 person         260         260         75         19,500           And Comment Resolution         1 person         420         75         19,500	HD/RA SOW									
NA Preparation         1 person         40         46         75         3,000         80         75         6,000         80         75         6,000         80         75         6,000         80         75         6,000         80         75         27,000         80         75         27,000         80         80         80         80         75         27,000         80 <t< td=""><td>PreDesign Studies/Preliminary Scoping</td><td></td><td></td><td>8</td><td>240</td><td>75</td><td>18,000</td><td></td><td></td><td>18,000</td></t<>	PreDesign Studies/Preliminary Scoping			8	240	75	18,000			18,000
OW Preparation         1 person         80         75         6,000         6         7         6         7         6         7         7         6         7         7         6         7         7         7         6         7         9         9         9         9         9         9         9         9         9         9         9<	Design Criteria	1 person		40	40	75	3,000			3,000
and Comment Resolution         1 person         360         75         27,000         Person           Sosping         1 person         1 person         160         75         12,000         Person           Avg Comment Resolution         1 person         260         260         75         19,500         Person           Cost         Cost         420         420         75         31,500         Person	RD/RA SOW Preparation	1 person		88	80	75	6,000			000'9
Oost         Cooperation         1 person         160         160         160         75         12,000           NW Work Plan         1 person         260         260         75         19,500           And Comment Resolution         1 person         420         420         75         31,500	Reviews and Comment Resolution	1 person		360	360	75	27,000			27,000
Y Scoping         1 person         160         75         12,000           NW Work Plan         1 person         260         260         75         19,500           and Comment Resolution         1 person         420         420         75         31,500	RD/RA SOW Cost									54,000
Y. Scoping         1 person         160         75         12,000           DW Work Plan         1 person         260         260         75         19,500           and Comment Resolution         1 person         420         75         31,500										
Y Scoping         1 person         160         75         12,000           NW Work Plan         1 person         260         260         75         19,500           and Comment Resolution         1 person         420         420         75         31,500										
Y. Scoping         1 person         160         160         75         12,000           DW Work Plan         1 person         260         260         75         19,500           and Comment Resolution         1 person         420         75         31,500										
Y. Scoping         1 person         160         160         75         12,000           DW Work Plan         1 person         260         260         75         19,500           and Comment Resolution         1 person         420         75         31,500           Cost         Cost         75         31,500         15										
Ty Scoping         1 person         160         161         175         12,000           DW Work Plan         1 person         260         260         75         19,500           and Comment Resolution         1 person         420         75         31,500           Cost         Cost         75         31,500         10	RA Workplan									
Oork Plan         1 person         260         260         75         19,500           omment Resolution         1 person         420         420         75         31,500	Preliminary Scoping	1 person		39	160	7.5	12,000			12,000
omment Resolution 1 person 1 420 420 75 31,500	RD/RA SOW Work Plan	1 person		260	260	75	19,500			19,500
	Reviews and Comment Resolution	1 person		450	420	75	31,500			31,500
	RA Workplan Cost									63,000

#### DETAILED COST ESTIMATE (CONT.SHEET)

Page 8 of 38

Project OU 4-13 Waste Area Group (WAG) 4 FS Cost Estimates

Central Facilities Area (CFA) - 08: Sewage Treatment Plant Drainfield

Alternative #2

Institutional Controls

Type of Estimate: Planning File No: 3952-D

Date: 01/29/99

ACCT.	DESCRIPTION	QUANTITY	1	LBR/EQP,	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	RA Document Preparation (cont.)									
	Packaging, Shipping, Transportation Documentation		ļ							
	Sampling and Analysis	N/A				<u> </u>				N/A
	Hazard Classification	N/A								N/A
	Selection and Procurement of Packaging	N/A								N/A
	Reviews and Comment Resolution	N/A	<u> </u>							N/A
	Packaging, Shipping, Transportation Documentation Cost									N/A
J	Remedial Action Report								-	
	RA Report Preparation	1 person	1	320	320	75	24,000	·		24,000
	Reviews and Comment Resolution	1 person		320	320	75	24,000			24,000
	Remedial Action Report Cost						1			48,000
	WAG-Wide RA 5 Yr. Review - (Cost Per Each, Required (1/4) FTE	For Years 1 thru 5; (1/4) F	TE in (5) Yr.	Increments	for 6 thru 95	)				
	5 Year Review Preparation	23 years	]	350	8,050	75	603,750			604,000
,	Reviews and Comment Resolution	23 years		120	2,760	75	207,000			207,000
<u>.</u>	WAG-Wide RA 5 Yr. Reviews For 100 Years									811,000
	RD Document Preparation									
	Safety Analysis Documentation (ASA & HSP)								1	
	Auditable Safety Analysis/Hazards Classification	2 person		160	320	75	24,000		]	24,000
	Unresolved Safety Questions	2 person		160	320	75	24,000			24,000
	Quality Assurance	1 person		30	30	75	2,250			2,250
	Reviews and Comment Resolution	2 person		335	670	75	50,250			50,250
	Safety Analysis Documentation Cost									100,500

Institutional Controls

### DETAILED COST ESTIMATE (CONT.SHEET)

Page	9 of	38

Project	OU 4-13 V	Nasta Area	Group (WAG) 4	FS Cost	Estimate
Project	UU 4-13 1	masie Area	COLOUD (WAC) 4	F 5 CUSI	Countrie

Central Facilities Area (CFA) - 08: Sewage Treatment Plant Drainfield

Alternative #2

Type of Estimate: Planning File No: 3952-D

Date: 01/29/99

CCT.	DESCRIPTION	QUANTITY	MAT'L UT.	LBR/EQP	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
10.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	cost
	Sampling and Analysis Plan			ļ		<u> </u>				
	Preliminary Scoping	N/A				1				N/A
	Field Sampling Plan Preparation	N/A								N/A
	Reviews and Comment Resolution	N/A								N/A
	Sampling and Analysis Plan Cost									N/A
	RD Document Preparation (cont.)									
	Pre-Final Inspection Report									
	Checklist Preparation	1 person		40	40	<del> </del>	3,000			3,000
	Reviews and Comment Resolution	1 person		60	60	75	4,500			4,500
	Pre-Final Inspection Report Cost				ļ. <u> </u>					7,500
			<u> </u>							
	Remedial Design									
	Added institutional Controls - 5 Yr. Review of Deed Restrictions	with Governing Bodies and P	ublic Comm	ent Over a 1	00 Year Per	od; Total of	20 Reviews.			
	Legal Attorney and Env. Affairs at \$10K ea.	20 each	10,000					200,000		200,000
	Total Added Institutional Controls - 100 Year Duration					_				200,000
	Title Design Construction Document Package									
	Remedial Design and Work Plan	1 person		40	40	75	3,000			3,000
	Siting and Surveying	1 lot	-	20	20	75	1,500			1,500
	Review and Revise Final Design	3 drwngs	2000					6,000		6,000
	Final Design of Construction Package	3 drwngs	3500					10,500		10,500
	Title Design Construction Document Package									21,000
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Institutional Controls

Rev 10-96

#### DETAILED COST ESTIMATE (CONT.SHEET)

Page	10 of	38

oject OU 4-13 Waste Area Group (WAG) 4 FS Cost Estimates
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Central Facilities Area (CFA) - 08: Sewage Treatment Plant Drainfield

Type of Estimate: Planning

Alternative #2

File No: 3952-D Date: 01/29/99
Prep'd By: J. R. Baker

ACCT.	DESCRIPTION	QUANTITY	MAT'L UT	LBR/EQP,	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.	<u></u>	UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	Remedial Action									
	Site Characterization	N/A								N/A
										. <u>.</u>
			<u> </u>							
					ļ .					
					<u> </u>					
			<u> </u>		ļ					
	Construction Subcontract - (to begin in the year 2000)	<del>-</del>		ļ					· · · · · · · · · · · · · · · · · · ·	
	<u> </u>									<del></del>
						<del> </del>				
	Install Perimeter Fencing w/ Gates and Signage	2,500 Inft	20					50,000		50,000
		<del></del>								
	Mobilization/Demobilization @ 3% of above construction cost	50,000 const\$	0.03					1,500		1,500
	Training's	5 person	0.03	24	120	35	4,200	1,300		4,200
	Project Supervision	3 months		170	510	40	20,400			20,400
	Project Support Personnel - Salety & IH	3 months		340	1,020	35	35,700	-		35,700
	Project Booties, Gloves, Masks, Signage, etc	1 lot	2500		.,,,,,,	"	22,1.44	2,500		2,500
	, reject mooned, distriby interior, ordinage, over	, , , , ,	2550					2,500		
							-			
	Construction Subcontract Subtotal this page						Î			114,300

Page 11 c	of 38
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Project OU 4-13 Waste Area Group (WAG) 4 FS Cost Estimates

Central Facilities Area (CFA) - 08: Sewage Treatment Plant Drainfield

Alternative #2

Institutional Controls

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Type of Estimate: Planning File No: 3952-D

Date: 01/29/99

ACCT.	DESCRIPTION	QUANTITY	MAT'L UT.		LBR/EQP	LBR/EQP	LBR/EQP COST	MAT'L COST	OTHER COST	TOTAL COST
NO.		UNIT	COST	UNIT HHS	TOTAL HRS	RATE	COST	COST	COSI	
	Construction Subcontract Subtotal previous page							 	<del>  </del>	114,300
								<b> </b>	<del>                                     </del>	
							<del> </del>			
<del></del>	Total Construction Subcontract Direct Cost	1		<del> </del>						114,000
	Construction Subcontract Overhead and Profit @ 30%	<u> </u>			<u> </u>	<del> </del>			-	34,200
	Total Construction Subcontract Direct and Indirect Cost		_			<b></b>			<del>                                     </del>	148,000
				<u> </u>						
				l	]	l				
	Procurement Fees @ 2.5%									3,700
	G&A and PIF Fee Allowance @ 33%									48,840
	Construction Subcontract & GFE - Total Amount		· i							201,000
				<del></del>						
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					· · · · · · · · · · · · · · · · · · ·					
	Project/Construction Management Allowance									
	Project/Construction Management @ 22.06% of Const. Subcontract	Cost	<u> </u>						1	32,649
	Project/Construction Management Allowance									32,649
	Tropadoria de la companya della companya della companya de la companya della comp								<del> </del>	02,010
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#### DETAILED COST ESTIMATE (CONT.SHEET)

Page	12 of	38

OU 4-13 Waste Area Group (WAG) 4 FS Cost Estimates Central Facilities Area (CFA) - 08: Sewage Treatment Plant Drainfield

Alternative #2 Institutional Controls Type of Estimate: Planning

File No: 3952-D

Date: 01/29/99

ACCT.	DESCRIPTION	QUANTITY	MAT'L UT.	LBR/EQP	LBR/EQP	LBR/EQP	LBR/EQP	MATL	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	Remedial Action - Operations (100 Year Duration)									
	Program Management									
	Coordination/Oversight of Technical Support	1 person		200	200	75	15,000			15,000
	Coordination with Agency Participants	1 person		80	80	75	6,000			6,000
	Cost and Schedule Control	1 person		59	59	65	3,848			3,848
	Ensure Compliance of Gov't Regulation	1 person		32	32	70	2,240			2,240
	Reviews	1 person		32	32	65	2,080			2,080
	Audit Preparation and Coordination	1 person		32	32	65	2,080			2,080
	Annual Operations and Maintenance Reports	1 person		40	40	65	2,600			2,600
	Total Cost (Per Year)									33,850
	Program Management Costs - 100 Year Duration	100 years	33,850					3,385,000		3,385,000
			ļ			ļ <u></u>				·
··					1				İ	
	Continued CFA Caretaker/Maintenance									
	Caretaker	1 person		188	188	75	14,100			14,100
	Fencing Maintenance	2500 Inft	1					2,500		2,500
	Surface Drainage Maintenance	200,000 sqft	0.04					8,000		8,000
	Continued CFA Caretaker/Maintenance Cost Per Year									24,600
	Caretaker Cost - 100 Year Duration	100 years	24,600					2,460,000		2,460,000
	Operations, Maintenance, Materials and Disposal	N/A	_							N/A
	Operations, maintenance, materials and proposal									
	D&D of Facilities	N/A	<u> </u>						·	N/A
			ļ <u> </u>	ļ						
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#### DETAILED COST ESTIMATE (CONT.SHEET)

Page	13	ωf	38

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Project	OU 4-13 Waste Area Group (WAG) 4 FS Cost Estimates					
	Central Facilities Area (CFA) - 08: Sewage Treatment Plant Drainfield	Type of Estimate: Planning	File No: 3952:D	Date:	01/29/99	_
	Alternative #2			Prep'd By:	J. R. Baker	_
	Institutional Controls					

ACCT.	DESCRIPTION	QUANTITY		LBR/EQP	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT			TOTAL HRS	RATE	COST	COST	COST	COST
	Surveillance and Monitoring (annual sampling & monitoring activities	) - Assumes groundwate	r monitoring	g is not requ	ired.	· · · · · · · · · · · · · · · · · · ·				I
	Ground Water Sampling/Monitoring, Maint. Insp://Report	100 years								N/A
	Gamma Surveys using Hand Held Dectors - 1 per year	100 years		40	4,000	75	300,000			300,000
	5-Year Review Report	20 times	6,000					120,000		120,000
	note: gamma survey's will be required.									
	Surveillance and Monitoring Costs - 100 Year Duration									420,000
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Page 14 of 38

Rev 10-96

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OU 4-13 Waste Area Group (WAG) 4 FS Cost Estimates Project

Central Facilities Area (CFA) - 08: Sewage Treatment Plant Drainfield

Alternative #3A

Excavate, Segmented Gate Treatment & Onsite Disposal

Type of Estimate: Planning File No: 3952-D

Date: 01/29/99

ACCT.	DESCRIPTION	QUANTITY	MAT'L UT.	LBR/EQP,	LBR/EQP	LBRÆQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	FFA/CO Management and Oversight									
	Program Management					<u> </u>				
	Coordination/Oversight of Technical Support	1 person		640	640	75	48,000			48,000
	Coordination with Agency Participants	1 person		320	320	75	24,000			24,000
	Cost and Schedule Control	1 person		320	320	65	20,800			20,800
	Ensure Compliance of Gov't Regulation	1 person		160	160	70	11,200			11,200
	Quarterly and Yearly Reviews	1 person		160	160	65	10,400			10,400
	Audit Preparation and Coordination	1 person		160	160	65	10,400			10,400
	Total Cost (Per Year)									124,800
	Total Cost (Per Year Rounded)									125,000
	Program Management5 year duration during the design stages,	3.50 year	125,000					437,500		437,500
	a 2 year duration during the construction period and a 1 year duration a	after.								
	RA Document Preparation									
	RD/RA SOW									
	PreDesign Studies/Preliminary Scoping	3 person		80	240	75	18,000		į	18,000
	Design Criteria	1 person		40	40	75	3,000			3,000
	RD/RA SOW Preparation	1 person		80	80	75	6,000			6,000
	Reviews and Comment Resolution	1 person		360	360	75	27,000			27,000
	RD/RA SOW Cost									54,000
	RA Workplan							1		
	Preliminary Scoping	1 person		160	160	75	12,000			12,000
	RD/RA SOW Work Plan	1 person		260	260	75	19,500			19,500
	1	1 person		420	420	75	31,500			31,500
	Reviews and Comment Resolution	i person								

Rev 10-96

Page 15 of 38

Project	OU 4-13 Waste Area Group (WAG) 4 FS Cost Estimates
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Central Facilities Area (CFA) - 08: Sewage Treatment Plant Drainfield

Alternative #3A

Excavate, Segmented Gate Treatment & Onsite Disposal

Type of Estimate: Planning

File No: 3952-D

Date: 01/29/99

ACCT.	DESCRIPTION	QUANTITY	MAT'L UT.	LBR/EQP	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	RA Document Preparation (cont.)		ļ	ļ <u></u>					ļ <u> </u>	
	Packaging, Shipping, Transportation Documentation Cost									
	Sampling and Analysis	N/A								N/A
	Hazard Classification	N/A			<u></u>					N/A
	Selection and Procurement of Packaging	N/A								N/A
	Reviews and Comment Resolution	N/A								N/A
	Packaging, Shipping, Transportation Documentation Cost									N/A
-										
			ļ							
	Remedial Action Report	-	]							
	RA Report Preparation	1 person		320	320	75	24,000			24,000
	Reviews and Comment Resolution	1 person		320	320	75	24,000			24,000
_	Remedial Action Report Cost									48,000
<del></del>									1	
	<u> </u>									
	WAG-Wide RA 5 Yr. Review - (Cost Per Each, Required (1/4) FTE	For Years 1 thru 5: (1/4) F	TE in (5) Yr.	Increments	for 6 thru 95	<u>,                                     </u>			1	
	5 Year Review Preparation	23 years	1 - 11 (-7 11	350	8,050	75	603,750			604,000
	Reviews and Comment Resolution	23 years	İ	120	2,760	75	207,000			207,000
	WAG-Wide RA 5 Yr. Reviews For 100 Years							· · · · · · · · · · · · · · · · · · ·		811,000
	MACANOCIA CONTINUE OF TOTAL	<u> </u>			· · ·					
		<del> </del>	1							
-	RD Document Preparation									
	Safety Analysis Documentation (ASA & HSP)	-								
	Auditable Safety Analysis/Hazards Classification	2 person		160	320	75	24,000			24,000
	Unresolved Safety Questions	2 person	1	160	320	75	24,000		1	24,000
	Quality Assurance	1 person		30	30	75	2,250			2,250
	Reviews and Comment Resolution	2 person		335	670	75	50,250			50,250
	Safety Analysis Documentation Cost					T				100,500
	Salety Alialysis Documentation Cost		<del> </del>	<del> </del>	<del>                                     </del>	<del>  </del>			<del> </del>	,

Rev 10-96

Page 16 of 38

Project	OU 4-13 Waste Area Group (WAG) 4 FS Cost Estimates
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Central Facilities Area (CFA) - 08: Sewage Treatment Plant Drainfield

Alternative #3A

Excavate, Segmented Gate Treatment & Onsite Disposal

Type of Estimate: Planning File No: 3952-D

. . . . . .

Date: 01/29/99

CCT.	DESCRIPTION	QUANTITY	MAT'L UT.	LBRVEQP	LBR/EQP	LBR/EQP	LBR/EQP	' MAT'L	OTHER	TOTAL
<b>1</b> 0.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	Sampling and Analysis Plan									
	Preliminary Scoping	1 person		320	320	75	24,000			24,000
	Field Sampling Plan Preparation	1 person	<u> </u>	400	400	75	30,000			30,000
	Reviews and Comment Resolution	1 person	1	720	720	75	54,000			54,000
	Sampling and Analysis Plan Cost									108,000
	RD Document Preparation (cont.)					-				
	Pre-Final Inspection Report		<u> </u>							
	Checklist Preparation	1 person	<u>ļ                                    </u>	40	40	+	3,000			3,000
	Reviews and Comment Resolution	1 person	]	60	60	75	4,500			4,500
	Pre-Final Inspection Report Cost					ļ <u>.</u>				7,500
			ļ							
			ļ							
	Remedial Design		]	<u> </u>		<u> </u>				
	Added Institutional Controls - 5 Yr. Review of Deed Restrictions	with Governing Bodies and P	ublic Comm	ent Over a	00 Year Peri	od; Total of	20 Reviews.			
	Legal Attorney and Env. Affairs at \$10K ea.	20 each	10,000					200,000		200,000
	Total Added Institutional Controls - 100 Year Duration		ļ							200,000
	Title Design Construction Document Package									
	Remedial Design and Work Plan	1 person		40	40	75	3,000			3,000
	Siting and Surveying	1 lot		20	20	75	1,500			1,500
	Treatment Research and Specification Requirements	1 person		340	340	75	25,500			25,500
	Review and Revise Final Design	10 drwngs	2000					20,000		20,000
	Final Design of Construction Package	10 drwngs	3500					35,000		35,000
	Title Design Construction Document Package									85,000
			1		ļ	ļ				
		L	<u> </u>	ļ	1	<u> </u>		<u> </u>		

Rev 10-96

Project

Page 17 of 38

	OU 4-13 Waste Area Gi	roup (WAG) 4	FS Cost Estimates
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Central Facilities Area (CFA) - 08: Sewage Treatment Plant Drainfield

Alternative #3A

Excavate, Segmented Gate Treatment & Onsite Disposal

Type of Estimate: Planning File No: 3952-D

Date: 01/29/99

ACCT.	DESCRIPTION	QUANTITY		LBR/EQP	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	Remedial Action -									
	Site Characterization - Sampling and Analysis									
	note: excavation volume = 200,000 sqft of site area x 10 ft of excav	ation depth/27 cuft/cuyd	= 74,074 cu	/ds.						
	assuming excavation equals 30 cuyds per hour then 74,074 cuyds/30 cuyds per hour = 2,469 crew hours									
	2,469 crew hours / 8 hours per day x 75% efficiency factor = 411 da	ys / 20 working days pe	r month = 20	.57 months.						
	Site Area	200,000 sqft								for information or
	Soil Volume	74,074 cuyd			ļ. <del></del>					for information or
	Excavation Duration	21 months								for information or
							201.100		"	7011.16
	SMO - Sample Prep, SOW, Analysis of Data, Tracking, etc.	2 year		2,008	4,016	70	281,120			281,12
	Characterization of extent; assume min. of 10 samples per site; max									
	Gamma	200 samples	63					12,600		12,60
	Sample Collection - includes labels, shipping, documentation, etc.	200 samples		0.50	100	50	5,000			5,00
	ICDF Waste Acceptance Criteria (WAC) - 4 samples per site									
	Organic Sampling:									
	VOC 's	4 samples	160					640	•• • • • • • • • • • • • • • • • • • • •	64
	SVOC's	4 samples	320					1,280		1,28
	Pesticides	4 samples	120			<u> </u>		480		48
	TCLP VOC's	4 samples	150			<u>  </u>		600		60
	TCLP SVOC's	4 samples	200			ļ		800		80
	TCLP Pesticides	4 samples	120			<b> </b>		480	<del></del>	48
	TCLP Metals	4 samples	925		ļ			3,700		3,70
	RAD Sampling:		ļ			<b>  </b>				
	Gamma Spec.	4 samples	63					252		25
	Gross Alpha	4 samples	32					128		12
	Alpha Spec.	4 samples	652					2,608		2,60
	Site Characterization - Sampling and Analysis subtotal this page				<u> </u>	<u> </u>				309,68

Rev 10-96

Page	18 of	38
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Project OU 4-13 Waste Area Group (WAG) 4 FS Cost Estimates

Central Facilities Area (CFA) - 08: Sewage Treatment Plant Drainfield

Alternative #3A

Excavate, Segmented Gate Treatment & Onsite Disposal

Type of Estimate: Planning File No: 3952-D

Date: 01/29/99

ACCT.	DESCRIPTION	QUANTITY	MAT'L UT	LBR/EQP	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	Site Characterization - Sampling and Analysis subtotal previous page									309,688
	DAD Complian cost									
	RAD Sampling cont	4	0.5	<u> </u>			+	340		340
	Beta Analysis	4 samples	85					340		340
	Inorganic Sampling:									
	Cyanides	4 samples	30					120		120
	Total Metals	4 samples	925					3,700		3,700
	Prep for Total Metals	4 samples	66					264		264
	Anions	4 samples	105					420		420
	Prep for Anions	4 samples	50					200		200
	рН	4 samples	18			 		72		72
	Sample Collection During Excavation -	21 months		172.00	3,612	50	180,600			180,600
	includes labels, shipping, documentation, etc.									
	Soil Characterization during Excavation @ 1 per 10 cuyd									
	Gamma Spec.	7,407 each	63					466,641		466,641
·		é 1 comple per 1000ant	ol sito oros							
•	Site Verification Sampling: assume min. of 3 samples per site; max of Gamma	200 samples	63					12,600		12,600
	Sample Collection - includes labels, shipping, documentation, etc.	200 samples		0.50	100	50	5,000	12,000		5,000
	Data Validation Based Upon 10% of the Sampling Cost	979,645 sample\$	0,1					97,965		97,965
	Handling (5%), G&A(27%), PIF (4.5%) & Procurment (2.5%)	1,077,610 totai\$	0.4283	1			1	461,540		461,540
	Site Characterization - Sampling and Analysis									1,539,000

Page 19 of 3	18
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Central Facilities Area (CFA) - 08: Sewage Treatment Plant Drainfield

Alternative #3A

Excavate, Segmented Gate Treatment & Onsite Disposal

Type of Estimate: Planning File No: 3952-D

Date: 01/29/99

ACCT.	DESCRIPTION	QUANTITY	MATLUT		LBR/EQP	LBRVEQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HAS	RATE	COST	COST	COST	COST
	Construction Subcontract - (to begin in the year 2000)					]				
	Note: This estimate only addresses the drain field north of the old CFA Sewage Treatment Plant. It is assumed that all other Sewage Treatment Plant restorations will be									
	done by the Operating Contractor at no cost to this project.									<del></del>
	Temporary Utilities - water, power, etc.	1 lot	250000					250,000		250,000
	Excavation of Soils & Tiles, liquids will remain w/ soils	74,074 cuyd		0.035	2,592.59	150	388,889			388,889
	Screening/Crushing/Segmented Gating of Soils (100%) - complete	74,074 cuyd	100					7,407,400		7,407,400
	Loader (2) support - assume 20 cuyd/hour	93 weeks		40	3,720	300	1,116,000			1,116,000
:		741 trokids			741	55	40,755			40.755
	Exporting of Soils (10%) to the ICDF			<u> </u>	,41	33	40,700	266,668		266,668
	Place Back and Compact Clean Soils (90%)	66,667 cuyd 7,408 cuyd	10			<del></del>	<del>-</del>	74,080	†	74,080
	Import & Place 1' avg. Fill to Level Site - imported mat'ls on INEEL	7,100 00)4								
										<del></del>
		200.000 +++	0.04					8,000		8.000
	Revegetate Site	200,000 sqft 1 lot	150000			<del>                                     </del>		150,000	<del>                                     </del>	150,000
	D & D of Site Improvements	9,701,792 const\$	0.03			<del>                                     </del>		291,054		291,054
	Mobilization/Demobilization @ 3% of above construction cost		0.03	24	288	35	10.080	201,004		10.080
	Training's	12 person 24 months		170	4,080	40	163.200		· · · · · · · · · · · · · · · · · · ·	163,200
	Project Supervision		<del> </del>	340	8,160	35	285,600		<del></del>	285,600
	Project Support Personnel - Safety & IH  Construction Subcontract Subtotal this page	24 months		340	8,160	35	203,800		-	10,451,725

## DETAILED COST ESTIMATE (CONT.SHEET)

Page 20 of 38

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OU 4-13 Waste Area Group (WAG) 4 FS Cost Estimates

Central Facilities Area (CFA) - 08: Sewage Treatment Plant Drainfield

Alternative #3A

Excavate, Segmented Gate Treatment & Onsite Disposal

Type of Estimate: Pianning File No: 3952-D

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Date: 01/29/99

ACCT.	DESCRIPTION	QUANTITY	MAT'L UT.	LBR/EQP,	LBR/EQP	LBR/EQP	LBRVEQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	Construction Subcontract Subtotal previous page									10,451,725
	Project Booties, Gloves, Masks, Signage, etc	1 lot	25000					25,000		25,000
	Disposal Cost of Materials @ the ICDF	7,408 cuyd	GFE		,					
	note: ref. WAG 3 FS Appendix E									
	Total Construction Subcontract Direct Cost									10,477,000
	Construction Subcontract Overhead and Profit @ 30%									3,143,100
	Total Construction Subcontract Direct and Indirect Cost									13,620,000
	GFE Disposal Cost of Materials 6 the ICDF	7,408 cuyd	104					770,432		770,432
•	Procurement Fees @ 2.5%									359,761
	G&A and PIF Fee Allowance @ 33%									4,748,843
	Construction Subcontract & GFE - Total Amount									19,499,000
			•							
	Project/Construction Management Allowance									
	Project/Construction Management @ 22.06% of Const. Subcontract C	ost								3,005,000
	Project/Construction Management Allowance									3,005,000
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### DETAILED COST ESTIMATE (CONT.SHEET)

Page	21	οt	38

Project	OU 4-13 Was	te Area Grour	(WAG) 4	ES Cost	Estimates
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Central Facilities Area (CFA) - 08: Sewage Treatment Plant Drainfield

Alternative #3A

Excavate, Segmented Gate Treatment & Onsite Disposal

Type of Estimate: Planning

File No: 3952-D

Date: 01/29/99

ACCT.	DESCRIPTION	QUANTITY	MAT'L UT.	LBR/EQP,	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	Remedial Action - Operations (100 Year Duration)									
	Program Management									
	Coordination/Oversight of Technical Support	N/A							1	N/A
	Coordination with Agency Participants	N/A				<u> </u>				N/A
	Cost and Schedule Control	N/A								N/A
	Ensure Compliance of Gov't Regulation	NA								N/A
	Reviews	N/A								N/A
	Audit Preparation and Coordination	N/A								N/A
	Annual Operations and Maintenance Reports	N/A								N/A
	Total Cost (Per Year)									N/A
	Program Management Costs - 100 Year Duration	100 years	N/A							N/A
			<u> </u>							
	Continued CFA Caretaker/Maintenance									
	Caretaker	N/A							<u> </u>	N/A
	Fencing Maintenance	N/A								N/A
•	Continued CFA Caretaker/Maintenance Cost Per Year									N/A
	Caretaker Cost - 100 Year Duration	100 years	N/A							N/A
	Operations, Maintenance, Materials and Disposal	N/A								N/A
									<u> </u>	
	D&D of Facilities	N/A								N/A

### DETAILED COST ESTIMATE (CONT.SHEET)

Page 22 of	f 38
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OU 4-13 Waste Area Group (WAG) 4 FS Cost Estimates

Central Facilities Area (CFA) - 08: Sewage Treatment Plant Drainfield

Alternative #3A

Type of Estimate: Planning

File No: 3952-D

Date: 01/29/99

Excavate, Segmented Gate Treatment & Onsite Disposal	

ACCT.	DESCRIPTION	QUANTITY	MAT'L UT.		LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	Surveillance and Monitoring (annual sampling & monitoring activities	s) - Assumes groundwate	r monitoring	is not requ	red.					
			<u> </u>	<u> </u>						
	Ground Water Sampling/Monitoring, Maint. Insp./Report	100 years								N/A
	Gamma Surveys using Hand Held Dectors - 1 per year	100 years		40	4,000	75	300,000			300,000
	5-Year Review Report	20 times	6,000					120,000		120,000
	note: gamma survey's will be required.									
	Surveillance and Monitoring Costs - 100 Year Duration									420,000
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### DETAILED COST ESTIMATE (CONT.SHEET)

Page 23 of ###

Project	OU 4-13 Waste Area Group (WAG) 4 FS Cost Estimates

Central Facilities Area (CFA) - 08: Sewage Treatment Plant Drainfield

Excavate, Segmented Gate Treatment & Offsite Disposal

Type of Estimate: Planning

File No: 3952-0

Date: 01/29/99

ACCT.	DESCRIPTION	QUANTITY	MAT'L UT.	LBR/EQP	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	FFA/CO Management and Oversight	ļ								
	Program Management									
	Coordination/Oversight of Technical Support	1 person		640	640	75	48,000			48,000
	Coordination with Agency Participants	1 person	ļ	320	320	+	24,000			24,000
	Cost and Schedule Control	1 person		320	320	65	20,800			20,800
	Ensure Compliance of Gov't Regulation	1 person		160	160	70	11,200			11,200
	Quarterly and Yearly Reviews	1 person		160	160	<del>                                     </del>	10,400			10,400
	Audit Preparation and Coordination	1 person		160	160	65	10,400			10,400
	Total Cost (Per Year)	<u></u>						,		124,800
	Total Cost (Per Year Rounded)									125,000
_ ,	Program Management5 year duration during the design stages,	3.50 year	125,000	<u> </u>	<u>.</u>			437,500		437,500
	a 2 year duration during the construction period and a 1 year duration	after.								
	RA Document Preparation									
	RD/RA SOW									
	PreDesign Studies/Pretiminary Scoping	3 person		80	240	75	18,000			18,000
	Design Criteria	1 person		40	40	75	3,000			3,000
	RD/RA SOW Preparation	1 person		80	80	75	6,000			6,000
	Reviews and Comment Resolution	1 person		360	360	75	27,000			27,000
	RD/RA SOW Cost									54,000
						<u> </u>				
	RA Workplan					i				
	Preliminary Scoping	1 person		160	160	75	12,000			12,000
	RD/RA SOW Work Plan	1 person		260	260	75	19,500			19,500
	Reviews and Comment Resolution	1 person		420	420	75	31,500			31,500
	RA Workplan Cost	T								63,000

## DETAILED COST ESTIMATE (CONT.SHEET)

Page	24 ol	f ###
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OU 4-13 Waste Area Group (WAG) 4 FS Cost Estimates

Central Facilities Area (CFA) - 08: Sewage Treatment Plant Drainfield

Alternative #3B Excavate, Segmented Gate Treatment & Offsite Disposal Type of Estimate: Planning

File No: 3952-D

Date: 01/29/99

CCT.	DESCRIPTION	QUANTITY	MAT'L UT.	LBR/EQP,	LBR/EQP	LBR/EQP	LBR/EQP	MATL	OTHER	TOTAL		
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST		
	RA Document Preparation (cont.)											
	Packaging, Shipping, Transportation Documentation Cost											
	Sampling and Analysis	1.0 person		240	240	75	18,000			18,000		
	Hazard Classification	1.0 person	<u></u>	200	200	75	15,000			15,000		
	Selection and Procurement of Packaging	1.0 person		80	80	75	6,000			6,000		
	Reviews and Comment Resolution	1.0 person		520	520	75	39,000		<u> </u>	39,000		
	Packaging, Shipping, Transportation Documentation Cost									78,000		
							j		<u> </u>			
	Remedial Action Report											
	RA Report Preparation	1 person		320	320	75	24,000			24,000		
	Reviews and Comment Resolution	1 person		320	320	75	24,000			24,000		
	Remedial Action Report Cost									48,00		
	1											
	WAG-Wide RA 5 Yr. Review - (Cost Per Each, Required (1/4) FTE For Years 1 thru 5; (1/4) FTE in (5) Yr. Increments for 6 thru 95)											
	5 Year Review Preparation	23 years		350	8,050	75	603,750			604,000		
	Reviews and Comment Resolution	23 years		120	2,760	75	207,000			207,000		
	WAG-Wide RA 5 Yr, Reviews For 100 Years									811,000		
	RD Document Preparation											
	Safety Analysis Documentation (ASA & HSP)					i						
	Auditable Safety Analysis/Hazards Classification	2 person		160	320	75	24,000			24,000		
	Unresolved Safety Questions	2 person		160	320	75	24,000			24,000		
	Quality Assurance	1 person		30	30	75	2,250			2,250		
	Reviews and Comment Resolution	2 person		335	670	75	50,250			50,250		
	Safety Analysis Documentation Cost									100,500		
		· · · [·	<u> </u>			<del>                                     </del>		· · ·	1			

### DETAILED COST ESTIMATE (CONT.SHEET)

Type of Estimate: Planning

Page 25 of ###

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OU 4-13 Waste Area Group (WAG) 4 FS Cost Estimates Central Facilities Area (CFA) - 08: Sewage Treatment Plant Drainfield

Alternative #3B

Excavate, Segmented Gate Treatment & Offsite Disposal

File No: 3952-D

Date: 01/29/99

ACCT.	DESCRIPTION	QUANTITY	MAT'L UT.	LBR/EQP	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL	
NO.	1	UNIT	COST	UNIT HRŚ	TOTAL HRS	RATE	COST	COST	COST	COST	
	Sampling and Analysis Plan							····			
	Preliminary Scoping	1 person		320	320	75	24,000			24,000	
	Field Sampling Plan Preparation	1 person		400	400	75	30,000		1	30,000	
	Reviews and Comment Resolution	1 person		720	720	75	54,000			54,000	
	Sampling and Analysis Plan Cost									108,000	
										<u> </u>	
	RD Document Preparation (cont.)										
	Pre-Final Inspection Report			ļ		<del>                                     </del>		-			
	Checklist Preparation	1 person		40	40	75	3,000		,	3,000	
	Reviews and Comment Resolution	1 person		60	60	75	4,500			4,500	
	Pre-Final Inspection Report Cost							_	<b></b>	7,500	
										· • • • • • • • • • • • • • • • • • • •	
	Remedial Design										
	Added Institutional Controls - 5 Yr. Review of Deed Restrictions	with Governing Bodies and P	ublic Comm	ent Over a 1	00 Year Peri	od; Total of	20 Reviews.				
	Legal Attorney and Env. Affairs at \$10K ea.	20 each	10,000		ļ <u></u>			200,000		200,000	
	Total Added Institutional Controls - 100 Year Duration				1					200,000	
	Title Design Construction Document Package										
	Remedial Design and Work Plan	1 person		40	40	75	3,000			3,000	
	Siting and Surveying	1 lot		20	20	75	1,500			1,500	
	Treatment Reseach and Specification Requirements	1 person		340	340	75	25,500			25,500	
	Review and Revise Final Design	10 drwngs	2000			ļ		20,000		20,000	
	Final Design of Construction Package	10 drwngs	3500			<u> </u>		35,000		35,000	
	Title Design Construction Document Package			ļ						85,000	
			<del>                                     </del>	<del> </del>		<del> </del>					
	<u> </u>	<u> </u>	<u> </u>		L	J	ŀ				

### DETAILED COST ESTIMATE (CONT.SHEET)

Page 26 of ###

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OU 4-13 Waste Area Group (WAG) 4 FS Cost Estimates

Central Facilities Area (CFA) - 08: Sewage Treatment Plant Drainfield

Excavate, Segmented Gate Treatment & Offsite Disposal

File No: 3952-D Type of Estimate: Planning

Date: 01/29/99

ACCT.	DESCRIPTION	QUANTITY	MAT'L UT	LBR/EQP	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	Remedial Action -									
	Site Characterization - Sampling and Analysis									
	note: excavation volume = 200,000 sqft of site area x 10 ft of excav	ation depth/27 cuft/cuyd	= 74,074 cu	yds.						
	assuming excavation equals 30 cuyds per hour then 74,074 cuyds/	30 cuyds per hour = 2,46	39 crew hour	'S						
	2,469 crew hours / 8 hours per day x 75% efficiency factor = 411 da	ays / 20 working days pe	r month = 20	).57 months.				·		
	Site Area	200,000 sqft								for information only
	Soil Volume	74,074 cuyd								for information only
	Excevation Duration	21 months								for information only
	SMO - Sample Prep, SOW, Analysis of Data, Tracking, etc.	2 year		2,008	4,016	70	281,120			281,120
			1							
	Characterization of extent: assume min. of 10 samples per site; max	of 1 sample per 1000 so	ft of site are	a.						
	Gamma	200 samples	63					12,600		12,600
	Sample Collection - includes labels, shipping, documentation, etc.	200 samples		0.50	100	50	5,000			5,000
		•								
	Off Site Soil Respository Waste Acceptance Criteria (WAC) - 4 samp	ples per site								
	Organic Sampling:									
	VOC's	4 samples	160					640		640
	SVOC's	4 samples	320					1,280		1,280
	Pesticides	4 samples	120					480		480
	TCLP VOC's	4 samples	150					600		600
	TCLP SVOC's	4 samples	200					800		800
	TCLP Pesticides	4 samples	120					480		480
	TCLP Metals	4 samples	925					3,700		3,700
	RAD Sampling:									
	Gamma Spec.	4 samples	63					252		252
	Gross Alpha	4 samples	32					128		128
	Alpha Spec.	4 samples	652					2,608		2,608
	Site Characterization - Sampling and Analysis subtotal this page							İ		309,688

### DETAILED COST ESTIMATE (CONT.SHEET)

Page 27 of ###

Project	OU 4-13 Waste	Area Group	(WAG) 4	FS Cost	Estimate:
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Central Facilities Area (CFA) - 08: Sewage Treatment Plant Drainfield

Alternative #3B

Excavate, Segmented Gate Treatment & Offsite Disposal

Type of Estimate: Planning

File No: 3952-D

Date: 01/29/99

ACCT.	DESCRIPTION	QUANTITY	MAT'L UT	LBR/EQP	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	Site Characterization - Sampling and Analysis subtotal previous page									309,688
	200			20						
	RAD Sampling cont.							340		340
	Beta Analysis	4 samples	85			-		340		
	Inorganic Sampling:									
	Cyanides	4 samples	30				1	120		120
	Total Metals	4 samples	925					3,700		3,700
	Prep for Total Metals	4 samples	66					264		264
	Anions	4 samples	105					420		420
	Prep for Anions	4 samples	50					200		200
	рН	4 samples	18					72		7:
	Sample Collection During Excavation -	21 months		172.00	3,612	50	180,600			180,60
	includes labels, shipping, documentation, etc.									
	Soil Characterization during Excavation @ 1 per 10 cuyd									
	Gamma Spec.	7,407 samples	63					466,641		466,64
		-								· ·
	Site Verification Sampling: assume min. of 3 samples per site; max o	f 1 sample per 1000sqft	of site area.							
	Gamma	200 samples	63					12,600		12,600
	Sample Collection - includes labels, shipping, documentation, etc.	200 samples		0.50	100	50	5,000			5,000
	Data Validation Based Upon 10% of the Sampling Cost	979,645 sample\$	0.1					97,965		97,96
	Handling (5%), G&A(27%), PIF (4.5%) & Procurment (2.5%)	1,077,610 total\$	0.4283					461,540		461,540
	Site Characterization - Sampling and Analysis									1,539,00

### **DETAILED COST ESTIMATE (CONT.SHEET)**

Page 28 of ###

Project	OU 4-13 Waste Area Group (WAG) 4 FS Cost Estimates
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Central Facilities Area (CFA) - 08: Sewage Treatment Plant Drainfield

Alternative #3B

Excavate, Segmented Gate Treatment & Offsite Disposal

Type of Estimate: Planning File No: 3952-D

Date: 01/29/99

ACCT.	DESCRIPTION	QUANTITY	1	LBR/EQP	LBR/EQP	LBRVEQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	Construction Subcontract - (to begin in the year 2000)				<u></u>					
	Note: This estimate only addresses the drain field north of the old CFA S	Sewage Treatment Plant	. It is assum	ed that all ot	her Sewage T	reatment Pla	nt restorations w	rill be		
	done by the Operating Contractor at no cost to this project.				<u> </u>					
	Temporary Utilities - water, power, etc.	1 lot	250000					250,000		250,000
	Excavation of Soils & Tiles, liquids will remain w/ soils	74,074 cuyd		0.035	2,592.59	150	388,889	:		388,888
	Screening/Crushing/Semented Gating of Soils (100%) - complete	74,074 cuyd	100					7,407,400		7,407,400
	Exporting of Soils (10%) to the Off Site Soil Respository	741 trcklds		. 1	741	55	40,755	<del> </del>		40,75
	Loader (2) support - assume 20 cuyd/hour	93 weeks		40	3,720	300	1,116,000			1,116,00
	Place Back and Compact Clean Soils (90%)	66,667 cuyd	4					266,668		266,66
	import & Place 1' avg. Fill to Level Site - imported mat'ls on INEEL	7,408 cuyd	10					74,080		74,08
	Mobilization of Government Leased 74 cuyd rail gondolas to	100 railcars	GFE							·
	the INEEL for shipment of soils.									
	Load, Ship & Return (railcars) to the an approved	100 railcars	GFE	4	400	150	60,060			60,06
	RCRA Off Site Facility for disposal using 74 cuyd railcars.									
	Treatment and Disposal of Soil - assumed to meet LLW criteria	7,407 cuyd	GFE							
										·
							1			
-							1			
	Revegetate Site	200,000 sqft	0.04					8,000		8,00
	D & D of Site Improvements	1 lot	150000					150,000		150,00
	Mobilization/Demobilization @ 3% of above construction cost	9,761,852 const\$	0.03					292,856		292,85
	Training's	12 person		24	288	35	10,080			10,08
	Project Supervision	24 months		170	4,080	40	163,200		·	163,20
	Project Support Personnel - Safety & IH	24 months	<u> </u>	340	8,160	35	285,600			285,60
	Construction Subcontract Subtotal this page									10,513,58

### DETAILED COST ESTIMATE (CONT.SHEET)

Page 29 of ###

Project	Oli 4-13 Waste	Area Group (WAG) 4	<b>FS Cost Estimates</b>

Central Facilities Area (CFA) - 08: Sewage Treatment Plant Drainfield

Alternative #3B

Excavate, Segmented Gate Treatment & Offsite Disposal

Type of Estimate: Planning

File No: 3952-D

Date: 01/29/99

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ACCT.	DESCRIPTION	QUANTITY	MAT'L UT.	LBRVEOP	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	Construction Subcontract Subtotal previous page									10,513,587
	Project Booties, Gloves, Masks, Signage, etc	1 lot	25000					25,000		25,000
	Total Construction Subcontract Direct Cost									10,539,000
	Construction Subcontract Overhead and Profit @ 30%									3,161,700
	Total Construction Subcontract Direct and Indirect Cost									13,701,000
	GFE Disposal:									
	Mobilization of Government Leased 74 cuyd rail gondolas to	100 railcars	6000					600,600		600,600
	the INEEL for shipment of soils.	100 Tanoara	2300		<del> </del>			333,300	<del>+</del>	223,000
	Load, Ship & Return (railcars) to the an approved	100 railcars	6000					600,600		600,600
	RCRA Off Site Facility for disposal using 74 cuyd railcars.									
	Treatment and Disposal of Soil	7,408 cuyd	400				***	2,963,200		2,963,200
	GFE Disposal Cost									4,164,000
	Procurement Fees @ 2.5%									446,625
	G&A and PIF Fee Allowance © 33%									5,895,450
	Construction Subcontract & GFE - Total Amount									24,207,000
	Project/Construction Management Allowance			ļ. <u></u>						3,022,441
	Project/Construction Management @ 22.06% of Const. Subcontract C	USI						1		
	Project/Construction Management Allowance	·	<del>                                     </del>			<del></del>		- 1	<del></del>	3,022,441

### DETAILED COST ESTIMATE (CONT.SHEET)

Page	30 of	###
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Project OU 4-13 Waste Area Group (WAG) 4 FS Cost Estimates Central Facilities Area (CFA) - 08: Sewage Treatment Plant Drainfield

> Alternative #3B Excavate, Segmented Gate Treatment & Offsite Disposal

Type of Estimate: Planning

File No: 3952-D

Date: 01/29/99

CCT.	DESCRIPTION	QUANTITY	MAT'L UT.		L:BR/EQP	LBR/EQP	LBRVEQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	Remedial Action - Operations (100 Year Duration)		<u> </u>							
	Program Management									
	Coordination/Oversight of Technical Support	N/A					•			N/A
	Coordination with Agency Participants	N/A								N/A
	Cost and Schedule Control	N/A								N/A
	Ensure Compliance of Gov't Regulation	N/A								N/A
	Reviews	N/A	1							N/A
	Audit Preparation and Coordination	N/A								N/A
	Annual Operations and Maintenance Reports	N/A								N/A
	Total Cost (Per Year)								1	N/A
	Program Management Costs - 100 Year Duration	100 years	N/A							NA
			1							
	Continued CFA Caretaker/Maintenance									
	Caretaker	N/A								N/A
	Fencing Maintenance	N/A								N/A
	Continued CFA Caretaker/Maintenance Cost Per Year									N/A
	Caretaker Cost - 100 Year Duration	100 years	N/A							N/A
							·			
	Operations, Maintenance, Materials and Disposal	N/A								N/A
	D&D of Facilities	N/A								N/A
-										

Page	31	nf	###

Project OU 4-13 Waste Area Group (WAG) 4 FS Cost Estimates	Project	OU 4-13 Waste	Area Group (WAG) 4	FS Cost Estimates
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Central Facilities Area (CFA) - 08: Sewage Treatment Plant Drainfield

Alternative #3B

Type of Estimate: Planning

File No: 3952-D

Date: 01/29/99

Alternative #35
Excavate, Segmented Gate Treatment & Offsite Disposal

ACCT.	DESCRIPTION	QUANTITY		LBR/EQP		LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HAS	TOTAL HRS	RATE	COST	COST	COST	COST
	Surveillance and Monitoring (annual sampling & monitoring activities	) - Assumes groundwate	r monitoring	g is not requ	ilred.					
									l	
	Ground Water Sampling/Monitoring, Maint. Insp./Report	100 years								N/A .
	Gamma Surveys using Hand Held Dectors - 1 per year	100 years		40	4,000	75	300,000			300,000
	5-Year Review Report	20 times	6,000					120,000		120,000
	note: gamma survey's will be required.									
	Surveillance and Monitoring Costs - 100 Year Duration									420,000
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Alternative #4

Containment with ET - Type Cap Cover

Rev 10-96

Page 32 of 38

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OU 4-13 Waste Area Group (WAG) 4 FS Cost Estimates	_
Central Facilities Area (CFA) - 08: Sewage Treatment Plant Drainfield	_

Type of Estimate: Planning

File No: 3952-D

Date: 01/29/99

ACCT.	DESCRIPTION	QUANTITY	MAT'L UT.	LBR/EQP,	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HAS	TOTAL HRS	RATE	COST	COST	COST	COST
	FFA/CO Management and Oversight									
	Program Management		ļ. <u>.</u>							
	Coordination/Oversight of Technical Support	1 person		640	640	75	48,000			48,000
	Coordination with Agency Participants	1 person		320	320	75	24,000			24,000
	Cost and Schedule Control	1 person		320	320	65	20,800			20,800
	Ensure Compliance of Gov't Regulation	1 person		160	160	70	11,200			11,200
	Quarterly and Yearly Reviews	1 person		160	160	65	10,400			10,400
	Audit Preparation and Coordination	1 person	ļ	160	160	65	10,400			10,400
	Total Cost (Per Year)									124,800
	Total Cost (Per Year Rounded)									125,000
	Program Management5 year duration during the design stages,	2.50 year	125,000					312,500		312,500
	a 1 year duration during the construction period and a 1 year duration	after.	<u> </u>	ļ						
		<u> </u>								
	RA Document Preparation									
	RD/RA SOW									
	PreDesign Studies/Preliminary Scoping	3 person		80	240	75	18,000			18,000
	Design Criteria	1 person	ļ	40	40	75	3,000			3,000
	RD/RA SOW Preparation	1 person	<u> </u>	80	80	75	6,000			6,000
	Reviews and Comment Resolution	1 person		360	360	75	27,000			27,000
	RD/RA SOW Cost	<u> </u>	<u> </u>	ļ						54,000
		<u> </u>								
	RA Workplan					<u> </u>				
	Preliminary Scoping	1 person	<u> </u>	160	160	75	12,000			12,000
	RD/RA SOW Work Plan	1 person		260	260	75	19,500			19,500
	Reviews and Comment Resolution	1 person		420	420	75	31,500			31,500
	RA Workplan Cost	1	i	l	l	1				63,000

Rev	10.96

Project

Page 33 of 38

OU 4-13 Waste Area Group	(WAG) 4	FS Cost Estimates
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Central Facilities Area (CFA) - 08: Sewage Treatment Plant Drainfield

Alternative #4

Containment with ET - Type Cap Cover

Type of Estimate: Planning

File No: 3952-D

Date: 01/29/99

CCT.	DESCRIPTION	QUANTITY	MAT'L UT.	LBR/EQP	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HAS	TOTAL HRS	RATE	COST	COST	COST	COST
	RA Document Preparation (cont.)								ļ	
	Packaging, Shipping, Transportation Documentation Cost		ļ						<del>                                     </del>	
	Sampling and Analysis	N/A			_					N/A
	Hazard Classification	N/A							ļ	N/A
	Selection and Procurement of Packaging	N/A		ļ					<del>                                     </del>	N/A
	Reviews and Comment Resolution	N/A							<u> </u>	N/A
·	Packaging, Shipping, Transportation Documentation Cost		<u> </u>						1	N/A
			ļ							
	Remedial Action Report					-1,-,-				
	RA Report Preparation	1 person		320	320	75	24,000		<del>                                     </del>	24,000
	Reviews and Comment Resolution	1 person		320	320	75	24,000			24,000
	Remedial Action Report Cost			ļ					<b></b>	48,000
	WAG-Wide RA 5 Yr. Review - (Cost Per Each, Required (1/4) FTE	For Years 1 thru 5; (1/4) F	TE in (5) Yr.	Increments	for 6 thru 95	<b>,</b>			ļ <u> </u>	
	5 Year Review Preparation	23 years	<u> </u>	350	8,050	75	603,750		ļ	604,000
	Reviews and Comment Resolution	23 years		120	2,760	75	207,000			207,000
	WAG-Wide RA 5 Yr. Reviews For 100 Years									811,000
	RD Document Preparation									
	Safety Analysis Documentation (ASA & HSP)									<del></del>
	Auditable Safety Analysis/Hazards Classification	2 person	<u></u>	160	320	75	24,000		1	24,000
	Unresolved Safety Questions	2 person		160	320	75	24,000			24,000
	Quality Assurance	1 person		30	30	75	2,250		<u> </u>	2,250
	Reviews and Comment Resolution	2 person		335	670	75	50,250			50,250
	Safety Analysis Documentation Cost									100,500
			1	1					IL	

### DETAILED COST ESTIMATE (CONT.SHEET)

Page 34 of 38

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OU 4-13 Waste Area Group (WAG) 4 FS Cost Estimates

Central Facilities Area (CFA) - 08: Sewage Treatment Plant Drainfield

Alternative #4

Containment with ET - Type Cap Cover

Type of Estimate: Planning

File No: 3952-D

Date: 01/29/99

ACCT.	DESCRIPTION	QUANTITY	MAT'L UT.	LBRVEQP	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRŚ	TOTAL HRS	RATE	COST	COST	COST	COST
	Sampling and Analysis Plan									
	Preliminary Scoping	1 person		320	320	75	24,000			24,000
	Field Sampling Plan Preparation	1 person		400	400	75	30,000			30,000
	Reviews and Comment Resolution	1 person		720	720	75	54,000			54,000
	Sampling and Analysis Plan Cost									108,000
										·····
			<u> </u>							
			L							
	RD Document Preparation (cont.)									
	Pre-Final Inspection Report				<u> </u>	<u> </u>				
	Checklist Preparation	1 person		40	40	75	3,000			3,000
	Reviews and Comment Resolution	1 person		60	60	75	4,500			4,500
	Pre-Final Inspection Report Cost									7,500
			,							
								=	·	
	Remedial Design						·			•
	Added institutional Controls - 5 Yr. Review of Deed Restrictions with Governing Bodies and Public Comment Over a 100 Year Period; Total of 20 Reviews.									
	Legal Attorney and Env. Affairs at \$10K ea.	2 person	I	160	100	100	10,000			10,000
	Total Added Institutional Controls - 100 Year Duration	20 each	10,000							200,000
	Title Design Construction Document Package									
	Remedial Design and Work Plan	1 person		40	40	75	3,000			3,000
	Siting and Surveying	1 lot		20	20	75	1,500			1,500
	Review and Revise Final Design	10 drwngs	2000	<u> </u>				20,000		20,000
	Final Design of Construction Package	10 drwngs	3500	<u> </u>				35,000		35,000
	Title Design Construction Document Package									59,500
						<u> </u>	i			

### DETAILED COST ESTIMATE (CONT.SHEET)

Page 35 of 38

Project	OU 4-13 Waste Area Group	(WAG) 4 FS Cost Estimates
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Central Facilities Area (CFA) - 08: Sewage Treatment Plant Drainfield

Containment with ET - Type Cap Cover

Type of Estimate: Planning

File No: 3952-D

Date: 01/29/99

ACCT.	DESCRIPTION	QUANTITY	MAT'L UT.	LBR/EQP	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	Remedial Action -									
	Site Characterization - Sampting and Analysis									
	SMO - Sample Prep, SOW, Analysis of Data, Tracking, etc.	1 year		2,008	2,008	70	140,560			140,560
	Total Gamma (1 sample per 1000 sqft) - Gamma Spectroscopy Only	200 sample	63					12,600		12,600
	Sample Collection - includes labels, shipping, documentation, etc.	200 samples		0.50	100	50	5,000			5,000
								·		
	Data Validation Based Upon 10% of the Sampling Cost	158,160 sample\$	0.1					15,816		15,81
	Handling (5%), G&A(27%), PIF (4.5%) & Procurment (2.5%)	173,976 total\$	0.4283					74,514		74,514
	Site Characterization - Sampling and Analysis								-	248,00
									1	
	Construction Subcontract - (to begin in the year 2000)					1				
	Note: This estimate only addresses the drain field north of the old CFA S	ewage Treatment Plant	(STP), it's as	sumed all o	ther STP resto	rations will b	e by the Operat	ing Contractor (		
	Clear and Grub Site	250,000 sqft	0.05					12,500		12,50
	Excavation of Perimeter Gravel Drain System	1,500 cuyd	8					12,000		12,00
	Install Gravel for Drain	1,500 cuyd	35					52,500		52,50
	Install Perimeter Drain Piping	2,300 Inft	18					41,400		41,40
	install Geotextile Layer	25,000 sqyd	9					225,000		225,00
	Import & Place 2' avg. Fill to Level Site - imported mat'ts on INEEL	15,000 cuyd	8					120,000		120,00
	Import & Place 24* Cobble Layer - imported mat'ls from Idaho Falls	15,000 cuyd	25					375,000		375,00
	Import & Place 6* Gravel Layer - imported mat'ls from Idaho Falls	3,800 cuyd	35					133,000		133,00
	Import & Place 4.1' Soil Layer - imported mat'ls on INEEL	31,000 cuyd	8					248,000		248,00
	Import & Place 6" Gravel Mulch - Imported mat'ts from Idaho Falls	3,800 cuyd	40					152,000		152,00
	Misc. Revegetation & Reclaimation	250,000 sqft	0.05					12,500		12,50
	Install Perimeter Fencing w/ Gates and Signage	2,500 Inft	20					50,000		50,00
	Mobilization/Demobilization @ 3% of above construction cost	1,433,900 const\$	0.03					43,017		43,01
	Project Supervision	12 months	<b></b>	170	2,040	40	81,600			81,60
	Project Support Personnel - Safety & IH	12 months		340	4,080	35	142,800			142,80
	Construction Subcontract Subtotal this page		1				1			1,701,317

Alternative #4

Containment with ET - Type Cap Cover

Rev 10-96

### DETAILED COST ESTIMATE (CONT.SHEET)

Page 36 of 38

Project	ΟÚ	4

OU 4-13 Waste Area Group (WAG) 4 FS Cost Estimates
Central Facilities Area (CFA) - 08: Sewage Treatment Plant Drainfield

Type of Estimate: Planning

File No: 3952-D

Date: 01/29/99

ACCT.	DESCRIPTION	QUANTITY	MAT'L UT.	LBRVEQP	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRŚ	TOTAL HRS	RATE	cost	COST	COST	COST
	Construction Subcontract Subtotal previous page									1,701,317
	Project Booties, Gloves, Masks, Signage, etc	1 lot	5000					5,000		5,000
	Construction Surveying and Staking	9 months		170	1,530	95	145,350			145,350
	Training	12 person	ļ	24	288	35	10,080			10,000
	Total Construction Subcontract Direct Cost									1,862,000
	Construction Subcontract Overhead and Profit @ 30%									558,600
	Total Construction Subcontract Direct and Indirect Cost									2,421,000
	Procurement Fees @ 2.5%									60,525
	G&A and PIF Fee Allowance @ 33%									798,930
	Construction Subcontract - Total Amount									3,280,000
			1							
	Project/Construction Management Allowance			<u> </u>						
	Project/Construction Management @ 22.06% of Const. Subcontract	Cost								534,000
	Project/Construction Management Allowance									534,000
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	Page	37	of	38
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Rev 10-96

Project

OU 4-13	Waste Area	Group (WAG) 4	FS Cost Estimates

Central Facilities Area (CFA) - 08: Sewage Treatment Plant Drainfield Alternative #4

Containment with ET - Type Cap Cover

Type of Estimate: Planning

File No: 3952-D

Date: 01/29/99

ACCT.	DESCRIPTION	QUANTITY	MAT'L UT.	LBR/EQP,		LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	Remedial Action - Operations (100 Year Duration)									
	Program Management									
	Coordination/Oversight of Technical Support	1 person	<u> </u>	200	200	75	15,000			15,000
	Coordination with Agency Participants	1 person		80	80	75	6,000			6,000
	Cost and Schedule Control	1 person		59	59	65	3,848			3,848
	Ensure Compliance of Gov't Regulation	1 person		32	32	70	2,240			2,240
	Reviews	1 person		32	32	65	2,080			2,080
	Audit Preparation and Coordination	1 person		32	32	65	2,080			2,080
	Annual Operations and Maintenance Reports	1 person		40	40	65	2,600			2,600
	Total Cost (Per Year)									33,850
	Program Management Costs - 190 Year Duration	100 years	33,850					3,385,000		3,385,000
					1			]		
	Continued CFA Caretaker/Maintenance									
	Caretaker	1 person		188	188	75	14,100			14,100
	Fencing Maintenance	2500 Inft	1			[[		2,500		2,500
	Cap Maintenance	200,000 sqft	0.04					8,000		8,000
	Continued CFA Caretaker/Maintenance Cost Per Year									24,600
	Caretaker Cost - 100 Year Duration	100 years	24,600					2,460,000		2,460,000
	Operations, Maintenance, Materials and Disposal	N/A								N/A
			<u> </u>							
		***					İ			
							* '			
	D&D of Facilities	N/A								N/A
									ļ-	<del></del>
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Page	78	of	38

Project OU 4-13 Waste Area Group (WAG) 4 FS Cost Estimates	
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Containment with ET - Type Cap Cover

Central Facilities Area (CFA) - 08: Sewage Treatment Plant Drainfield

Alternative #4

Type of Estimate: Planning

File No: 3952-D

Date: 01/29/99

Prep'd By:	J. R. Baker
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ACCT.	DESCRIPTION	QUANTITY	MAT'L UT.	LBR/EQP	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L.	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	Surveillance and Monitoring (annual sampling & monitoring activities)	- Assumes groundwate	r monitoring	g is not requ	ilred.					
				,						
	Ground Water Sampling/Monitoring, Maint. Insp./Report	N/A								N/A
	Gamma Surveys using Hand Held Detectors - 1 per year	100 years		40	4,000	75	300,000			300,000
	5-Year Review Report	20 times	6,000		·			120,000		120,000
	note: gamma survey's will be required.									
	Surveillance and Monitoring Costs - 100 Year Duration									420,000
			1							
			ļ							
			<u> </u>							
			1							
			<u> </u>							
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			<u> </u>						•	



# Lockheed Martin Idaho Technologies Company

# INTERDEPARTMENTAL COMMUNICATION

Date:

January 29, 1999

To:

J. F. Keck

MS 3625

6-5458

From:

D. T. Peterson

MS 3655

6-2990

Subject: OPERABLE UNIT (OU) 4 – 13 WASTE AREA GROUP (WAG) 4 FEASIBILITY

STUDY (FS) ALTERNATIVE COST ESTIMATES – CENTRAL FACILITIES

AREA (CFA) 10 - TRANSFORMER YARD OIL SPILL - DTP-007-99

Per your request, Cost Estimating has revised the Planning Cost Estimate to reflect the changes in the original and the additional scopes of work for the above-mentioned project. The Total Project Costs (TPC) for each of these alternatives are as follows:

		Net Present	
<u>Alternative</u>	1999 Dollars	Value Dollars	Escalated Dollars
#1 No Action	\$ 1,431,000	\$ 881,000	\$ 6,247000
#1 No Action	<b>5</b> 1,431,000	\$ 661,000	,
#2 Institutional	\$ 8,300,000	\$ 3,909,000	\$ 49,912,000
Controls			
#3A Excavate, Treat	\$ 1,456,000	\$ 1,380,000	\$ 1,553,000
& On Site Disposa	al .		
#3B Excavate, Treat	\$ 1,525,000	\$ 1,442,000	\$ 1,632,000
& Off Site Dispose	al		
#4 Containment	\$ 9,256,000	\$ 4,860,000	\$ 49,727,000
w/ the ET Type C	ap Cover		

Included for your use is the Cost Estimating Summary and Detail sheets with the cost breakdowns. Also included are the Cost Estimate Recapitulation sheets describing the basis and assumptions used in the development of this estimate. If you have any questions or comments, please do not hesitate to contact me at 526-2990 or E-mail ID DTP.

Attachments

As Stated:

cc: Estimate File #3954 - Rev. D

J. R. Baker Files

Lockheed Ma	rtin Idaho Technologies Co.	SUMMAR	Y COST ESTIMATE	SHEET			
Rev 10-96							
Page 1	of 1						
Project	OU 4 - 13 Waste Area Group (WAG) 4 FS Cost Estimates	Type of Estimate:	Planning	File No:	<u> 3954 - D</u>	Date:	01/29/99
	Central Facilities Area (CFA) - 10: Transformer Yard Oit Spiils					Prep'd By:	J. R. Baker
Location	Idaho National Engineering & Environmental Laboratory (INEEL)					Checked By:	
Requester	J. F. Keck MS 3625 526-5458		*. *				V
				,			
		ALTERNATIVE #1	ALTERNATIVE #2	ALTERNATIVE #3A	ALTERNATIVE #3B	ALTERNATIVE #4	
ACCT.		NO	INSTITUTIONAL	EXCAVATE	EXCAVATE	CONTAINMENT	
NO.	DESCRIPTION	ACTION	CONTROLS	TREAT & ON	TREAT & OFF	w/ ET - TYPE	
}		ļ	1	SITE DISPOSAL	SITE DISPOSAL	COVER	

		ALTERNATIVE #1	ALTERNATIVE #2	ALTERNATIVE #3A	ALTERNATIVE #3B	ALTERNATIVE #4	
ACCT.		NO	INSTITUTIONAL	EXCAVATE	EXCAVATE	CONTAINMENT	
NO.	DESCRIPTION	ACTION	CONTROLS	TREAT & ON	TREAT & OFF	w/ ET - TYPE	
				SITE DISPOSAL	SITE DISPOSAL	COVER	
	CAPITAL COST SUBTOTAL	\$1,101,000	\$1,504,368	\$1,120,000	\$1,173,000	\$2,240,000	
	Contingency @ 30%	\$330,300	\$451,310	\$336,000	\$351,900	\$672,000	
	TOTAL CAPITAL COST IN FY89 DOLLARS	\$1,431,000	\$1,956,000	\$1,456,000	\$1,525,000	\$2,912,000	
	TOTAL CAPITAL COST IN ESCALATED DOLLARS	\$6,247,000	\$8,140,000	\$1,553,000	\$1,632,000	\$9,171,000	
	TOTAL CAPITAL COST IN NET PRESENT VALUE	\$881,000	\$1,245,000	\$1,380,000	\$1,442,000	\$2,145,000	.,,
-	O&M COST SUBTOTAL	N/A	\$4,880,000	N/A	N/A	\$4,880,000	
	Contingency 9 30%	N/A	\$1,464,000	N/A	N/A	\$1,464,000	
	TOTAL O&M COST IN FY99 DOLLARS	N/A	\$6,344,000	N/A	N/A	\$6,344,000	
	TOTAL OAM COST IN ESCALATED DOLLARS	NA	\$41,772,000	N/A	N/A	\$40,556,000	
	TOTAL O&M COST IN NET PRESENT VALUE	NA	\$2,664,000	N/A	N/A	\$2,715,000	· · · · · · · · · · · · · · · · · · ·
	TOTAL PROJECT COST IN FY1999 DOLLARS	\$1,431,000	\$8,300,000	\$1,456,000	\$1,525,000	\$9,256,000	
	TOTAL PROJECT COST IN ESCALATED DOLLARS	\$6,247,000	\$49,912,000	\$1,553,000	\$1,632,000	\$49,727,000	
	TOTAL PROJECT COST IN NET PRESENT VALUE DOLLARS	\$881,000	\$3,909,000	\$1,380,000	\$1,442,000	\$4,860,000	

Lockheed Martin Idaho Technologies Company

# COST ESTIMATE SUPPORT DATA RECAPITULATION

Project Title:

OU 4-13 (WAG 4) FS Alternative Cost Estimates

Estimator:

D. T. Peterson

Date:

January 29, 1999

File:

Estimate Type: Planning 3954-D

Approved By:

I. **SCOPE OF WORK:** Brief description of the proposed project.

> Provide a Planning Cost Estimate (rough order of magnitude) for comparison of the Waste Area Group (WAG) 4 Central Facilities Area (CFA) Environmental Restoration Feasibility Study. The following alternative scenarios have been selected for the initial evaluation.

WAG 4 - CFA 10: TRANSFORMER YARD OIL SPILLS.

Alternative #1:

No Action

Alternative #2:

**Institutional Controls** 

Alternative #3A: Excavate, Treat and On Site Disposal

Alternative #3B: Excavate, Treat and Off Site Disposal

Alternative #4:

Containment with the ET Type Cap Cover

Summary costs have been prepared for comparative analyses and are presented in:

- 1. Current year 1999 dollars.
- 2. Escalated dollars per DOE published rates.
- 3. Present net worth dollars, discounting at a rate of 5% as recommended by the EPA under CERCLA guidance.
- BASIS OF THE ESTIMATE: Drawings, Design Report, Engineers Notes and/or II. other documentation upon which the estimate is originated.

Discussions with the Requestor (J. F. Keck).

Notegram from the Requestor outlining the preliminary scope, footprint and depth of contamination for this site.

Discussions with vendors currently participating in these types of restoration.

Use of the R. S. Means "Environmental Remediation Cost Data" manuals.

Continued –

Project Title: OU 4-13 (WAG 4) FS Alternative Cost Estimates

File:

3954-D

Page 2

Field observations of current and past INEEL construction projects and practices.

A project site visit.

Practices and techniques used in the development of previous comparable FS Cost Estimates. These would include but not limited to:

- 1. The estimates generated were performed in conjunction with the editing of the draft FS. Costs were generated and coordinated by cognizant estimators, engineers, and technical personnel.
- 2. Applicable Draft sections and preliminary outlines of FS document.
- 3. Coordination and status meetings with the Environmental Restoration cognizant engineers.
- 4. Area maps of sites from the Geographic Information System (GIS).
- 5. "Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA," Interim Final, published by the EPA for Superfund guidance.
- 6. Conversations with responsible performing organizations, i.e., LMITCO Legal Department (historical permitting/documentation effort), Sample Management Office (historical sampling and analysis requirements and costs), etc.
- 7. Drawings, sketches, flow diagrams generated as a result of the scoping process and cost estimate basis.
- 8. Descriptive makeup of the cap configurations considered for Alternative, sketch of footprint area and perimeter toe area of cap.
- 9. Cost information from Appendix E in "Focused Feasibility Study of Engineered Barriers for Waste Management Units in the 200 Areas," Bechtel Hanford, Inc., DOE/RL-93-33, Rev. 0.
- 10. D&D List, "INEL EM 40/60, RAD Contaminated Surplus Facilities, etc."
- 11. Procurement Fee and General and Administrative (G&A) percentages as prepared by Program Controls and Financial Operations, "Lockheed Idaho Technologies Company FY 1997 Planning Preparation Guidance", dated June 1, 1996, Rev. 0.

III. <u>ASSUMPTIONS</u>: Conditions statements accepted or supposed true without proof of demonstration. An assumption has a direct impact on total estimated cost.

This estimate assumes the following:

This estimate is based upon the activities and quantities stated on each detail sheet. Any variations to these quantities or activities will require adjustments to this estimate.

Continued –

Project Title: OU 4-13 (WAG 4) FS Alternative Cost Estimates

File: 3954-D

Page 3

The Record of Decision will be signed in November of 1999. All Remedial Design and construction activities are assumed to begin in the year 2000. Remedial Action activities vary per alternative and have been escalated to the midpoint of each activity.

INEEL Site Stabilization wages will apply; no overtime or shift differential has been considered for the construction efforts of these estimates.

No provisions were made for an 8-A Set Aside contractor. It is assumed that the job will be competitively bid within the local subcontracting community or accomplished by LMITCO personnel.

FFA/CO management costs encompass management oversight and coordination of initial planning activities, remedial action activity, operations/maintenance, including long term monitoring and institutional controls.

Program management duration was determined by the remedial action activity duration. Average effort was reflected as (1) full-time-equivalent (FTE) for the scheduled duration at a burdened rate of \$125,000 per year per FTE.

Program management involvement for the operation/maintenance period, an average effort of .25 FTE for the scheduled duration at a burdened rate of \$125,000 per year per FTE or \$31,250 per year.

RD/RA documents have been estimated as FFA/CO primary documents for quality, rigor, review and comment resolution. It is assumed that the review and comment resolution will be 50% of the total document costs. Where possible, RD/RA document preparation and program management costs have been based on historical data as per the INEL ER Cost Estimating Guide, Volume II, Environmental Restoration, August 1994.

The capital and O&M activities vary for all options and will start as directed by the responsible ER Program Management personnel. Capital costs will vary from one to three years per option dependent upon the complexity of remedial action activities. Duration of the Operations and Maintenance activity - surveillance and monitoring, is assumed to be 100 years.

Assume that the cost allowance associated with Program Documentation and Permitting will be sufficient to include all sites.

Remedial Design Activities include added institutional controls and a Title Design Construction Document package supporting remedial construction activities:

1. Added Institutional Controls consist of legal and environmental affairs relating to land deed restrictions at the CFA. It is assumed that all required land and deed restriction

Continued –

Project Title: OU 4-13 (WAG 4) FS Alternative Cost Estimates

File:

3954-D

Page 4

documents exist for all INEEL sites. Costs have been included for five-year reviews with the governing bodies and agencies to ensure existing restrictions meet current CERCLA compliance.

2. The Title Design Construction Document package assumes in-house Title I/Title II engineering effort and design document preparation. Costs associated with the Title Design effort are based on historical data for construction projects on the INEEL Site. Title Design ranges from 2% to 20% of each construction subcontract depending upon the complexity. It has been assumed that the design required for these alternatives will be of a simplistic nature.

Project/Construction Management activities in support of the remedial action construction is based on historical data for construction projects on the INEEL Site. A percentage of 22.06% of the construction subcontract directs and indirects is reflected.

No ground water monitoring will be required.

It is assumed that the costs for minimal operational effort for these items will be covered for a 100 year duration from the signing of the Record of Decision (ROD).

FFA/CQ Program Management has been included for an initial one year duration to coordinate with agencies and to oversee the RD/RA document preparation.

Existing Institutional Controls over a 100 year duration include costs minimal passive activities and operational effort for the following items:

- 1. Minimal grounds maintenance and repair including an allowance of material and the labor required for periodic repair of fencing, access roads and signage.
- 2. Caretaker inspection of the area.

Caretaker responsibilities will include a visual inspection of the physical security provisions (i.e., fencing, roads, signage, etc.), well inspections, coordination of snow removal and general grounds maintenance and upkeep. Minimal hours have been included at an average of .1 FTE per year for the 100 year surveillance and monitoring period.

Additional Institutional Controls consist of legal and environmental affairs relating to land and deed restrictions at the CFA area. It is assumed that all required land and deed restriction documents already exist for the INEEL. Costs have been included for five year reviews with the governing bodies and agencies to evaluate current conditions with CERCLA compliance.

Additional controls may include:

Continued -

Project Title: OU 4-13 (WAG 4) FS Alternative Cost Estimates

File: 3954-D

Page 5

- 1. Deed/regulatory restrictions limiting land use.
- 2. Soil moisture management and erosion control practice including groundwater drainage control and diversion.
- 3. Limit of access including security, fencing and markers.
- 4. Environmental monitoring (air, soil, and groundwater as indicated).

Five year reviews have been included for the 100 year surveillance and monitoring period.

It has been assumed that all capping materials (where applicable) are readily available on site in sufficient quantities unless specified and costed in the detail sheets.

It has been assumed that the disposal sites "as stated in the estimate", can and will accept the disposal materials.

The sampling of the waste incoming to the repository is assumed to be the responsibility of the waste soils generator.

It was assumed that permitting and legal services were required and costs have been included in these estimates.

It is assumed that personnel will be required to wear minimal personnel protective equipment (booties, gloves, and masks) during all excavation.

Interim weather protection and water runoff control of the contaminated soils disposal at culmination of seasonal fair weather will be handled with a liner or tarp.

RCRA sampling costs were included based on information from LMITCO ER program personnel.

IV. <u>CONTINGENCY GUIDELINE IMPLEMENTATION</u>: The percentage used for contingency as determined by the contingency allowance guidelines can be altered to reflect the type of construction and conditions that may impact the total estimated cost.

Time constraints, completeness of design and accessibility to resources have been taken into consideration in generating the final costs reflected in the accompanying detail sheets. The level of detailed costing and application of contingency have been addressed.

Continued ~

Project Title: OU 4-13 (WAG 4) FS Alternative Cost Estimates

File:

3954-D

Page 6

Maintaining conformance with standard Environmental Restoration Program Procedure's neither contingency and/or Management Reserve have been included within the body of this estimate. At the final summary level, an average overall project contingency of 30% has been reflected as a separate line item.

Standard Cost Estimating practice for Environmental Projects would recognize contingency within a range of 30% to 50% at this phase of planning. The possibility for changes in scope, selected remedial technology, waste characterization/volume and project definition present risks that need to be considered as potential impacts to the cost of projects at this early stage of scoping.

The 30% contingency was applied to all alternatives in order to maintain consistency for the purposes of comparative analysis only.

# V. OTHER COMMENTS/CONCERNS SPECIFIC TO THE ESTIMATE

Alternatives include an allowance for the General and Administration (G&A) and Procurement Fees on all subcontract work at a rate of 33% for G&A and PIF, and 2.5% for Procurement Fee compounded. No attempt was made at this time to outline a subcontract strategy to determine the number of subcontracts and/or separate procurement subcontracts that may be required during remedial action. As the preferred alternatives are selected and scope/schedule is further defined, costs will be revised.

The cost estimate shows life cycle costs for the WAG site as a stand alone project from signature of the ROD to the dismantlement of the WAG. The estimate is presented in a format consistent with the level of detail and approach for all sites. This format allows the cost estimate to be traceable to previous scope and schedule documentation. It facilitates comparison between other alternatives within the WAG sites and the WAG as a whole. The cost estimate details cost and scope assumptions in (6) RD/RA Area's: Design, Construction, Operations, Facilities Demolition, Surveillance and Monitoring, and Project/Program Management.

### Lockheed Martin Idaho Technologies Co.

### SUMMARY OF DETAILED COST ESTIMATE

Rev 10-96

Page 1 of 38

Project OU 4 - 13 Waste Area Group (WAG) 4 FS Cost Estimates

Type of Estimate: Planning

File No: 3954 - D

Date: 01/28/99

Prep'd By: J. R. Baker

Central Facilities Area (CFA) - 10: Transformer Yard Oil Spills Location Idaho National Engineering & Environmental Laboratory (INEEL) Requester J. F. Keck MS 3625 526-5458

		ALTERNATIVE #1	ALTERNATIVE #2	ALTERNATIVE #3A	ALTERNATIVE #3B	ALTERNATIVE #4	
ACCT.		NO	INSTITUTIONAL	EXCAVATE	EXCAVATE	CONTAINMENT	
NO.	DESCRIPTION	ACTION	CONTROLS	TREAT & ON	TREAT & OFF	w/ ET - TYPE	
110.				SITE DISPOSAL	SITE DISPOSAL	COVER	
ER1220	FFA/CO Management and Oversight						
	Program Management	\$125,000	\$125,000	\$219,000	\$219,000	\$219,000	
	RA Document Preparation						
	RD/RA SOW	\$54,000	\$54,000	\$54,000	\$54,000	\$54,000	
	RA Workplan	\$63,000	\$63,000	\$63,000	\$63,000	\$63,000	
	Packaging, Shipping, Trans. Documentation	N/A	N/A	N/A	\$78,000	N/A	
	Remedial Action Report	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000	
	WAG-Wide RA - 5 Yr. Review For 100 Years	\$811,000	\$811,000	N/A_	N/A	\$811,000	
	RD Documentation Preparation						
	Safety Analysis Documentation (ASA & HSP)	N/A	\$100,500	\$100,500	\$100,500	\$100,500	
	Sampling and Analysis Plan	N/A	N/A	\$108,000	\$108,000	\$108,000	
	Pre-Final Inspection Report	N/A	\$7,500	\$7,500	\$7,500	\$7,500	
ER1210	Remedial Design						
	Added Institutional Controls - 5 Yr. Review For 100 Years	N/A	\$200,000	N/A	N/A	\$200,000	
	Title Design Construction Document Package	N/A	\$21,000	\$85,000	\$60,000	\$60,000	
ER1230	Remedial Action - Construction Subcontract						
	Site Characterization	N/A	N/A	\$76,000	\$76,000	\$31,000	
	Construction Subcontract/GFE	N/A	\$64,000	\$315,000	\$322,000	\$463,000	
<del></del>	Project/Construction Management Allowance	N/A	\$10,368	\$44,000	\$37,000	\$75,000	
	TOTAL CAPITAL COST	\$1,101,000	\$1,504,368	\$1,120,000	\$1,173,000	\$2,240,000	
ER1230	Remedial Action - Operations (100 Year Duration)						
	Program Management	N/A	\$3,385,000	N/A	N/A	\$3,385,000	
	Continued/New Construction CFA Caretaker/Maintenance	N/A	\$1,495,000	N/A	N/A	\$1,495,000	
	Operations, Maintenance, Materials, and Disposal	N/A	N/A	N/A	N/A	N/A	
ER2000	D&D of Facilities	N/A	N/A	N/A	N/A	N/A	
ER1310	Surveillance and Monitoring	N/A	• <sup>4</sup> N/A	N/A	N/A	ħ/A	
	TOTAL OPERATIONS COST (100 YEARS)	N/A	\$4,880,000	N/A	N/A	\$4,880,000	

No Action

Rev 10-96

#### DETAILED COST ESTIMATE (CONT.SHEET)

Page 2	of 38
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Project	OU 4 - 13 Waste	Area Group (	WAG) 4 FS Cost	Estimates
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Central Facilities Area (CFA) - 10: Transformer Yard Oil Spills

Alternative #1

Type of Estimate: Planning File No: 3954 - D

Date: 01/28/99

Prep'd By: J. R. Baker

MAT'L UT. LBR/EQP LBR/EQP MAT'L OTHER TOTAL LBR/EOP LBR/EQP QUANTITY DESCRIPTION ACCT. COST COST COST UNIT HRS TOTAL HRS RATE COST COST UNIT NQ. FFA/CO Management and Oversight Program Management 48,000 640 75 48.000 640 1 person Coordination/Oversight of Technical Support 75 24,000 24,000 320 320 1 person Coordination with Agency Participants 20,800 320 320 65 20,800 Cost and Schedule Control 1 person 70 11,200 11,200 160 160 1 person Ensure Compliance of Gov't Regulation 160 65 10,400 10.400 160 1 person Quarterly and Yearly Reviews 65 10,400 10,400 160 160 Audit Preparation and Coordination 1 person 124,800 Total Cost (Per Year) 125,000 Total Cost (Per Year Rounded) 125,000 125,000 125,000 1 year Program Management - 1 Year Duration RA Document Preparation RD/RA SOW 18.000 80 240 75 18,000 3 person PreDesign Studies/Preliminary Scoping 75 3.000 40 3,000 1 person 40 Design Criteria 75 6,000 80 6,000 80 RD/RA SOW Preparation 1 person 75 27,000 360 360 27,000 Reviews and Comment Resolution 1 person 54,000 RD/RA SOW Cost RA Workplan 12,000 160 160 75 12,000 1 person Preliminary Scoping 19.500 260 260 75 19,500 RD/RA SOW Work Plan 1 person 420 420 75 31.500 31,500 1 person Reviews and Comment Resolution 63,000 RA Workplan Cost

Rev 10-96

Page 3 of 38

Project OU 4 - 13 Waste Area Group (WAG) 4 FS Cost Estin	iales

Central Facilities Area (CFA) - 10: Transformer Yard Oil Spills

Alternative #1

No Action

Type of Estimate: Planning

File No: 3954 - D

Date: 01/28/99

Τ.	DESCRIPTION	QUANTITY	MAT'L UT.	LBR/EQP	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
),		UNIT	COST	UNIT HRS	TOTAL HAS	RATE	COST	COST	COST	COST
	RA Document Preparation (cont.)					ļ.				
	Packaging, Shipping, Transportation Documentation									
	Sampling and Analysis	N/A								N/A
	Hazard Classification	N/A								N/A
	Selection and Procurement of Packaging	N/A	ļ			<u> </u>			<u> </u>	N/A
	Reviews and Comment Resolution	N/A								N/A
	Packaging, Shipping, Transportation Documentation Cost									N/A
	Remedial Action Report		-							
	RA Report Preparation	1 person	<del>                                     </del>	320	320	75	24,000			24,00
	Reviews and Comment Resolution	1 person		320	320		24,000			24,00
	Remedial Action Report Cost	, person		020	325				1	48,00
	WAG-Wide RA 5 Yr. Review - (Cost Per Each, Required (1/4) FTE	For Years 1 thru 5; (1/4) F	TE in (5) Yr.							
	5 Year Review Preparation	23 years		350	8,050		603,750			604,000
	Reviews and Comment Resolution	23 years		120	2,760	75	207,000			207,00
	WAG-Wide RA 5 Yr. Reviews For 100 Years									811,00
	RD Document Preparation									
	Safety Analysis Documentation (ASA & HSP)		ļ							
	Auditable Safety Analysis/Hazards Classification	N/A	ļ	ļ		<b></b>			<b> </b>	N/A
	Unresolved Safety Questions	N/A_							1	N/A
	Quality Assurance	N/A			<u> </u>				1	N/A
	1	N/A	Į.	l	1					N/A
	Reviews and Comment Resolution	IVA	-							N/A

No Action

DETAILED COST ESTIMATE (CONT.SHEET)

Rev 10-96

Page 4 of 38

Project	OU 4 - 13 Waste Area Group (WAG) 4 FS Cost Estimates	 
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Central Facilities Area (CFA) - 10: Transformer Yard O# Spills

Alternative #1

Type of Estimate: Planning File No: 3954 - D

Date: 01/28/99

CT.	DESCRIPTION	QUANTITY	MAT'L UT.	LBR/EQP	LBR/EQP	LBR/EQP	I,BR/EQP	MAT'L	OTHER	TOTAL
О.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	Sampling and Analysis Plan									
	Preliminary Scoping	N/A								N/A_
	Field Sampling Plan Preparation	N/A						<u>.</u> _		N/A
	Reviews and Comment Resolution	N/A		]						N/A
	Sampling and Analysis Plan Cost								<u> </u>	N/A
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				-					-	
	RD Document Preparation (cont.)			<del> </del>		-				
	Pre-Final Inspection Report									
	Checklist Preparation	N/A		<del>                                     </del>						N/A
	Reviews and Comment Resolution	N/A	<del></del>	1		1				N/A
	Pre-Final Inspection Report Cost									N/A
									<u> </u>	
			<del>                                     </del>	**						
	Remedial Design									
	Added Institutional Controls									
	Legal Attorney and Env. Affairs at \$10K ea.	N/A					_			N/A
	Total Added Institutional Controls - 100 Year Duration									N/A
				<u> </u>						
	Title Design Construction Document Package	N/A								N/A
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			<u> </u>	<u> </u>	ļ <u></u>				<del>   </del>	<del>-</del> -
	Remedial Action Site Characterization	N/A	+-			<del>  • •  </del>	_		<del>                                     </del>	N/A
	Construction Subcontract	N/A		<del> </del>	<del></del>	<del>                                     </del>			<del>                                     </del>	N/A
	· · · · · · · · · · · · · · · · · · ·	N/A		<del>                                     </del>					<del> </del>	N/A
	Project/Construction Management Allowance	IVA							<del>  - </del>	IVA
	<del> </del>		<del></del>			<del>   </del>			<del>  </del>	

No Action

Rev 10-96

Page	- 5	of	38

Project	OU 4 - 13 Waste	Area Group (WAG	) 4 FS Cost Estimates

Central Facilities Area (CFA) - 10: Transformer Yard Oil Spills
Alternative #1

Type of Estimate: Planning

File No: 3954 - D

Date: 01/28/99

ACCT.	DESCRIPTION	QUANTITY	MAT'L UT.	LBR/EQP	LBR/EQP	LBR/EQP	LBR/EQP	MATL	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	Remedial Action - Operations (100 Year Duration)									
	Program Management									
	Coordination/Oversight of Technical Support	N/A								N/A
	Coordination with Agency Participants	N/A								N/A
	Cost and Schedule Control	N/A								N/A
	Ensure Compliance of Gov't Regulation	N/A				ļ. <u> </u>				N/A
	Reviews	N/A	1							N/A
	Audit Preparation and Coordination	N/A								N/A
	Annual Operations and Maintenance Reports	N/A								N/A
	Total Cost (Per Year)									N/A
	Program Management Costs - 100 Year Duration	100 years	N/A						ļ	N/A
	Continued CFA Caretaker/Maintenance									
	Caretaker	N/A								N/A
	Fencing and Fence Maintenance	N/A								N/A
	Continued CFA Caretaker/Maintenance Cost Per Year		<del>                                     </del>							N/A
	Caretaker Cost - 100 Year Duration	100 years	N/A		•					NA
	Operations, Maintenance, Materials and Disposal	N/A								N/A
			-							
	D&D of Facilities	N/A								N/A
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Page	6 of	38

Project	OU 4 - 13 Waste Area Group (WAG) 4 FS Cost Estimates					
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Central Facilities Area (CFA) - 10: Transformer Yard Oli Spills

Alternative #1

No Action

Type of Estimate: Planning

File No: 3954 - D

Date: 01/28/99

ACCT.	DESCRIPTION	QUANTITY		LBR/EQP		L8R/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HAS	RATE	COST	COST	COST	COST
	Surveillance and Monitoring (annual sampling & monitoring activities) - Assumes groundwater monitoring is not required.									
	Ground Water Sampling/Monitoring, Maint. Insp./Report	100 years								N/A
	5-Year Review Report	20 times								N/A
	Surveillance and Monitoring Costs - 108 Year Duration									N/A
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Institutional Controls

Rev 10-96

### DETAILED COST ESTIMATE (CONT.SHEET)

Page	7 of	38

9-					
Project	OU 4 - 13 Waste Area Group (WAG) 4 FS Cost Estimates				
	Central Facilities Area (CFA) - 10: Transformer Yard Oil Spills	Type of Estimate: Planning	File No: File No:	Date:	01/28/99
	Alternative #2			Prep'd By:	

ACCT.	DESCRIPTION	QUANTITY	MAT'L UT.	LBRVEQP	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HAS	RATE	COST	COST	COST	COST
	FFA/CO Management and Oversight									
	Program Management		<u> </u>							
	Coordination/Oversight of Technical Support	1 person		640	640	75	48,000			48,000
	Coordination with Agency Participants	1 person		320	320	75	24,000			24,000
	Cost and Schedule Control	1 person	<u> </u>	320	320	65	20,800			20,800
	Ensure Compliance of Gov't Regulation	1 person		160	160	70	11,200			11,200
	Quarterly and Yearly Reviews	1 person		160	160	65	10,400			10,400
	Audit Preparation and Coordination	1 person		160	160	65	10,400			10,400
	Total Cost (Per Year)									124,800
	Total Cost (Per Year Rounded)				<u> </u>					125,000
	Program Management - 1 Year Duration	1 year	125,000	<u> </u>				125,000		125,000
					-					
	RA Document Preparation									
	RD/RA SOW					ļ l				
	PreDesign Studies/Preliminary Scoping	3 person		80	240	75	18,000			18,000
	Design Criteria	1 person		40	40	75	3,000			3,000
	RD/RA SOW Preparation	1 person		80	80	75	6,000			6,000
	Reviews and Comment Resolution	1 person		360	360	75	27,000			27,000
	RD/RA SOW Cost									54,000
	RA Workplan		ļ							
	Preliminary Scoping	1 person		160	160	75	12,000			12,000
	RD/RA SOW Work Plan	1 person		260	260	75	19,500			19,500
	Reviews and Comment Resolution	1 person		420	420	75	31,500			31,500
	RA Workplan Cost									63,000
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Lockheed Martin Idaho Technologies Co.

DETAILED COST ESTIMATE (CONT.SHEET)

Rev 10-96

8 of 38 Page

OU 4 - 13 Waste Area Group (WAG) 4 FS Cost Estimates Project

Central Facilities Area (CFA) - 10: Transformer Yard Oil Spills

Atternative #2

File No: Eile No: Type of Estimate: Planning

01/28/99 Date: Prep'd By:

24,000 604,000 207,000 24,000 24,000 2,250 50,250 24,000 48,000 811,000 100,500 TOTAL COST ٨ ž ¥ ž ٤ OTHER COST MATIL 24,000 24,000 207,000 24,000 24,000 2,250 50,250 603,750 LBRÆGP COST 25 25 75 75 75 75 LBR/EQP RATE 8,050 TOTAL HRS 320 2,760 320 320 30 670 LBR/EOP WAG-Wide RA 5 Yr. Review - (Cost Per Each, Required 1/4) FTE For Years 1 thru 5; 1/4) FTE in (5) Yr. Increments for 6 thru 95) S 22 UNIT HRS 8 8 160 160 30 335 LBRVEOP MAT'L UT. COST 2 person 1 person 1 person 23 years 2 person 2 person 1 person 23 years **≨ ₹** Ž QUANTITY ٨ Ę Packaging, Shipping, Transportation Documentation Cost Packaging, Shipping, Transportation Documentation Auditable Safety Analysis/Hazards Classification Safety Analysis Documentation (ASA & HSP) WAG-Wide RA 5 Yr. Reviews For 100 Years Selection and Procurement of Packaging Safety Analysis Documentation Cost Reviews and Comment Resolution Reviews and Comment Resolution Reviews and Comment Resolution Reviews and Comment Resolution Unresolved Safety Questions DESCRIPTION RA Document Preparation (cont.) 5 Year Review Preparation Remedial Action Report Cost Sampling and Analysis RA Report Preparation Hazard Classification Remedial Action Report RD Document Preparation **Quality Assurance** Institutional Controls ACCT. Š

## DETAILED COST ESTIMATE (CONT.SHEET)

Page	9 of	38	

Project OU 4 - 13 Waste Area Group (WAG) 4 FS Cost Estimates	
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Central Facilities Area (CFA) - 10: Transformer Yard Oil Spills

Alternative #2
Institutional Controls

Type of Estimate: Planning File No: File No:

Date: 01/28/99
Prep'd By:

CT.	DESCRIPTION	QUANTITY	MAT'L UT.	LBR/EQP	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
10.		UNIT	COST	UNIT HAS	TOTAL HAS	RATE	COST	COST	COST	cost
	Sampling and Analysis Plan									
	Preliminary Scoping	N/A	ļ							N/A
	Field Sampling Plan Preparation	N/A					<u></u>			N/A
	Reviews and Comment Resolution	N/A		!						N/A
	Sampling and Analysis Plan Cost		<u> </u>							N/A
	RD Document Preparation (cont.)									
	Pre-Final Inspection Report		<u> </u>							
	Checklist Preparation	1 person		40	40	75	3,000			3,00
	Reviews and Comment Resolution	1 person		60	60	75	4,500			4,50
	Pre-Final Inspection Report Cost									7,5
_										
	Remedial Design									
	Added institutional Controls - 5 Yr. Review of Deed Restrictions	with Governing Bodies and P	ublic Comm	ent Over a 1	00 Year Peri	od; Total of	20 Reviews.			
	Legal Attorney and Env. Affairs at \$10K ea.	20 each	10,000					200,000		200,0
	Total Added Institutional Controls - 100 Year Duration									200,0
	Title Design Construction Document Package									
	Remedial Design and Work Plan	1 person		40	40	75	3,000			3,0
	Siting and Surveying	1 lot		20	20	_75	1,500	_		1,5
	Review and Revise Final Design	3 drwngs	2000					6,000		6,00
	Final Design of Construction Package	3 drwngs	3500					10,500		10,50
	Title Design Construction Document Package									21,00
			<u> </u>							<del></del>

Page	10 of	38

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Project	OU 4 - 13 Waste Area Group (WAG) 4 FS Cost Estimates				
	Central Facilities Area (CFA) - 10: Transformer Yard Oil Spills	Type of Estimate: Planning	File No: File No:	Date:	01/28/99
	Alternative #2			Prep'd By:	
	Institutional Controls				

ACCT.	DESCRIPTION	QUANTITY		LBRÆQP	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	Remedial Action		<b> </b>							
	Site Characterization	N/A								N/A
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				<u> </u>		ļ				
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		<del> </del>	-							
			-							
	Construction Subcontract • (to begin in the year 2000)	<del> </del>	<del>                                     </del>		<u> </u>					
		+				<del> </del>				
	Install Perimeter Fencing w/ Gates and Signage	500 inft	20					10,000		10,000
	instant entitleter Ferbing wir Cates and Signage						·	,		
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	***************************************									
					-					
	Mobilization/Demobilization @ 3% of above construction cost	10,000 const\$	0.03					300		300
	Training's	5 person		24	120	35	4,200			4,200
	Project Supervision	1 months		170	170	40	6,800			6,800
	Project Support Personnel - Safety & IH	1 months		340	340	35	11,900			11,900
	Project Booties, Gloves, Masks, Signage, etc	1 lot	2500					2,500		2,500
			<u> </u>							
			1							
			1							
	Construction Subcontract Subtotal this page	<u> </u>		<u>                                     </u>		<u> </u>				35,700

Page	11	of	38

Page 1	1 of 38				
Project	OU 4 - 13 Waste Area Group (WAG) 4 FS Cost Estimates				
	Central Facilities Area (CFA) - 10: Transformer Yard Oil Spills	Type of Estimate: Planning	File No: File No:	Date:	01/28/99
	Alternative #2			Prep'd By:	
	Institutional Controls				

ACCT.	DESCRIPTION	QUANTITY UNIT	MAT'L UT. COST	LBR/EQP	LBR/EQP TOTAL HRS	LBR/EQP RATE	LBR/EQP COST	MAT'L COST	OTHER COST	TOTAL COST
	Construction Subcontract Subtotal previous page									35,700
							· ·			
	Total Construction Subcontract Direct Cost								<b></b>	36,000
	Construction Subcontract Overhead and Profit @ 30%			ļ <u> </u>						10,800
	Total Construction Subcontract Direct and Indirect Cost			ļ						47,000
				ļ	<u> </u>			<b>İ</b>	ļ	
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	Procurement Fees @ 2.5%									1,175
	G&A and PIF Fee Allowance @ 33%									15,510
	Construction Subcontract & GFE - Total Amount			ļ <u> </u>		ļ				64,000
<u> </u>										
	Project/Construction Management Allowance			ļ						
	Project/Construction Management @ 22.06% of Const. Subcontract	Cost		<u> </u>						10,368
	Project/Construction Management Allowance			,						10,368
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Page	12 of	38	

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Project	OU 4 - 13 Waste Area Group (WAG) 4 FS Cost Estimates				
	Central Facilities Area (CFA) - 10: Transformer Yard Oil Spills	Type of Estimate: Planning	File No: File No:	Date:	01/28/99
	Alternative #2			Prep'd By:	
	Institutional Controls				

ACCT.	DESCRIPTION	QUANTITY	MAT'L UT.	LBR/EQP	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NQ.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	Remedial Action - Operations (100 Year Duration)		l							
	Program Management									
	Coordination/Oversight of Technical Support	1 person		200	200	75	15,000			15,000
	Coordination with Agency Participants	1 person		80	80	75	6,000	1		6,000
	Cost and Schedule Control	1 person		59	59	65	3,848			3,848
	Ensure Compliance of Gov't Regulation	1 person		32	32	70	2,240			2,240
	Reviews	1 person		32	32	65	2,080			2,080
	Audit Preparation and Coordination	1 person		32	32	65	2,080			2,080
	Annual Operations and Maintenance Reports	1 person		40	40	65	2,600			2,600
	Total Cost (Per Year)									33,850
	Program Management Costs - 100 Year Duration	100 years	33,850					3,385,000		3,385,000
	Continued CFA Caretaker/Maintenance									
	Caretaker	1 person		188	188	75	14,100			14,100
	Fencing Maintenance	500 Inft						500		500
	Surface Drainage Maintenance	8,700 sqft	0.04	ļ.,				348		348
	Continued CFA Caretaker/Maintenance Cost Per Year									14,950
	Caretaker Cost - 100 Year Duration	100 years	14,950					1,495,000		1,495,000
			1							
			1		ļ					
	Operations, Maintenance, Materials and Disposal	N/A	1		<b></b>					N/A
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	D&D of Facilities	N/A								N/A
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Page	13 of	38
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Project	OU 4 - 13 Waste Area Group (WAG) 4 FS Cost Estimates			
	Central Facilities Area (CFA) - 10: Transformer Yard Off Spills	Type of Estimate: Planning	File No: File No:	Date: 01/28/99
	Alternative #2			Prep'd By:
	Institutional Controls			

ACCT.	DESCRIPTION	QUANTITY		LBR/EQP		LBR/EQP RATE	LBR/EQP COST	MAT'L COST	OTHER COST	TOTAL COST
NO.		UNIT			TOTAL HRS	MAIE	ÇÜĞI	CO31	CO31	CQ31
	Surveillance and Monitoring (annual sampling & monitoring activities	s) - Assumes groundwate	er monitoring	ls not requ	ired.	1		I		<del></del>
			<b></b>		<u> </u>					
	Ground Water Sampling/Monitoring, Maint. Insp./Report	100 years								N/A
			l		<b>i</b>					
	5-Year Review Report	20 times	1							N/A
	Surveillance and Monitoring Costs - 100 Year Duration									N/A
	Suitemance and monnoring deals - 100 real bullation		1							
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### DETAILED COST ESTIMATE (CONT.SHEET)

Page 14 of 38

Project	OU 4 - 13 Waste Area Group (WAG) 4	FS Cost Estimates

Excavate, Cement Stabilization Treatment & On Site Disposal

Central Facilities Area (CFA) - 10: Transformer Yard Oil Spills

Alternative #3A

Type of Estimate: Planning File No: 3954 - D

Date: 01/28/99
Prep'd By: J. R. Baker

ACCT.	DESCRIPTION	QUANTITY	MAT'L UT.	LBRVEQP	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	FFA/CO Management and Oversight									
	Program Management									
	Coordination/Oversight of Technical Support	1 person		640	640	75	48,000			48,000
	Coordination with Agency Participants	1 person		320	320	75	24,000			24,000
	Cost and Schedule Control	1 person		320	320	65	20,800			20,800
	Ensure Compliance of Gov't Regulation	1 person		160	160	70	11,200			11,200
	Quarterly and Yearly Reviews	1 person		160	160	65	10,400			10,400
	Audit Preparation and Coordination	1 person		160	160	65	10,400			10,400
	Total Cost (Per Year)					.,,,,				124,800
	Total Cost (Per Year Rounded)		<u> </u>		.=-					125,000
	Program Management25 year duration during the design stages,	1.75 year	125,000					218,750		219,000
	.5 year duration during the construction period and a 1 year duration at	iter.								
	RA Document Preparation									
	RD/RA SOW									
	PreDesign Studies/Preliminary Scoping	3 person		80	240	75	18,000			18,000
	Design Criteria	1 person		40	40	75	3,000			3,000
	RD/RA SOW Preparation	1 person		80	80	75	6,000			6,000
	Reviews and Comment Resolution	1 person		360	360	75	27,000			27,000
	RD/RA SOW Cost									54,000
							(			
	RA Workplan									
	Preliminary Scoping	1 person		160	160	75	12,000			12,000
	RD/RA SOW Work Plan	1 person		260	260	75	19,500			19,500
	Reviews and Comment Resolution	1 person		420	420	75	31,500			31,500
	RA Workplan Cost									63,000
				<b>'</b>						

### DETAILED COST ESTIMATE (CONT.SHEET)

Page 15 of 38

Project	OU 4 - 13 Waste Area Group (WAG) 4 FS Cost Estimates	
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Central Facilities Area (CFA) - 10: Transformer Yard Oil Spills

Alternative #3A

Excavate, Cement Stabilization Treatment & On Site Disposal

Type of Estimate: Planning File No: 3954 - D

Date: 01/28/99 Prep'd By: J. R. Baker

ACCT.	DESCRIPTION	QUANTITY	MAT'L UT.	LBR/EQP	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	RA Document Preparation (cont.)			<u></u>						
	Packaging, Shipping, Transportation Documentation Cost									
	Sampling and Analysis	N/A_			ļ				<u> </u>	N/A
	Hazard Classification	N/A	<u> </u>							N/A
	Selection and Procurement of Packaging	N/A	<u> </u>							N/A
	Reviews and Comment Resolution	N/A								N/A_
	Packaging, Shipping, Transportation Documentation Cost		<u> </u>					· · · · · · · · · · · · · · · · · · ·		N/A
	Remedial Action Report									
-	RA Report Preparation	1 person		320	320	75	24,000			24,000
	Reviews and Comment Resolution	1 person		320	320	75	24,000			24,000
	Remedial Action Report Cost		<del> </del>							48,000
	WAG-Wide RA 5 Yr. Review	N/A	<del> </del>	<del>                                     </del>	-				1	N/A
	5 Year Review Preparation	N/A N/A	<del> </del>			-			<del>                                     </del>	N/A
	Reviews and Comment Resolution	IVA	<del> </del>	<u> </u>				<del></del>	<del>                                     </del>	N/A
	WAG-Wide RA 5 Yr. Reviews									
	RD Document Preparation		<del> </del>							
	Safety Analysis Documentation (ASA & HSP)									
	Auditable Safety Analysis/Hazards Classification	2 person		160	320	75	24,000			24,000
	Unresolved Safety Questions	2 person		160	320	75	24,000			24,000
	Quality Assurance	1 person		30	30	75	2,250			2,250
	Reviews and Comment Resolution	2 person		335	670	75	50,250			50,250
	Safety Analysis Documentation Cost									100,500
			T-"-	1						

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Rev	10-9

Page 16 of 38

Project	OU 4 - 1	13 Waste Area	Group (WAG	14 FS	Cost Estimate

Central Facilities Area (CFA) - 10: Transformer Yard Oil Spills

Alternative #3A Excavate, Cement Stabilization Treatment & On Site Disposal Type of Estimate: Planning

File No: 3954 - D

Date: 01/28/99

CCT.	DESCRIPTION	QUANTITY	MAT'L UT.	LBRVEQP	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
Ю.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	Sampling and Analysis Plan									
	Pretiminary Scoping	1 person		320	320	75	24,000			24,000
	Field Sampling Plan Preparation	1 person		400	400	75	30,000			30,000
	Reviews and Comment Resolution	1 person		720	720	75	54,000			54,000
	Sampling and Analysis Plan Cost							-		108,000
	RD Document Preparation (cont.)									
	Pre-Final Inspection Report		ļ				<del></del>			
	Checklist Preparation	1 person		40	40	75	3,000			3,000
	Reviews and Comment Resolution	1 person		60	60	75	4,500			4,500
	Pre-Final Inspection Report Cost									7,500
	Remedial Design									
	Added Institutional Controls - 5 Yr. Review of Deed Restrictions	with Governing Bodies and P	ublic Comm	ent	<del></del> -	<del></del>				
	Legal Attorney and Env. Affairs at \$10K ea.							-		N/A
	Total Added Institutional Controls		-							N/A
	Title Design Construction Document Package									
	Remedial Design and Work Plan	1 person	ļ	40	40	75	3,000			3,000
	Siting and Surveying	1 lot		20	20	75	1,500			1,500
	Treatment Research and Specification Requirements	1 person	<u> </u>	340	340	75	25,500			25,500
	Review and Revise Final Design	10 drwngs	2000					20,000		20,000
	Final Design of Construction Package	10 drwngs	3500					35,000		35,000
	Title Design Construction Document Package		<u> </u>						+	85,000
			<del> </del>		<del>                                     </del>	<del>  </del>				

### DETAILED COST ESTIMATE (CONT.SHEET)

Page	17	~*	38
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Project OU 4 - 13 Waste Area Group (WAG) 4 FS Cost Estimates

Central Facilities Area (CFA) - 10: Transformer Yard Oil Spills Alternative #3A

Excavate, Cement Stabilization Treatment & On Site Disposal

File No: 3954 - D Type of Estimate: Planning

Date: 01/28/99

ACCT,	DESCRIPTION	QUANTITY		LBR/EQP	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
١٥.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	Remedial Action -									
	Site Characterization - Sampling and Analysis								•	
	note: excavation volume = 8,700 sqft of site area x .5 ft of excavation	on depth/27 cutt/cuyd = 1	61 cuyds.							
	assuming excavation equals 30 cuyds per hour then 161 cuyds/30	cuyds per hour = 6 crew	hours							
	Site Area	8,700 sqft								for information on
	Soil Volume	161 cuyd								for information on
	Excavation Duration	0.10 months								for information or
	EXCAVATION DUTATION	0,10 1110111113								
	SMO - Sample Prep, SOW, Analysis of Data, Tracking, etc.	1 year		120	120	100	12,000			12,00
	,						-			
	Characterization of extent: assume min. of 10 samples per site; max	of 1 sample per 100 sof	of site area							
	Total Pb	87 samples		1				5,481		5,48
	Sample Collection - includes labels, shipping, documentation, etc.	87 samples		0.50	44	50	2,175			2,17
	ICDF Waste Acceptance Criteria (WAC) - 4 samples per site									_
	Organic Sampling:									_
	VOC 's	4 samples	160					640		64
	SVOC's	4 samples	320					1,280		1,28
	Pesticides	4 samples	120					480		48
	TCLP Metals	4 samples	925					3,700		3,70
	TCLP VOC's	4 samples	150					600		60
	TCLP SVOC's	4 samples	200					800		80
	TCLP Pesticides	4 samples	120					480		48
	PCB's	4 samples	500					2,000		2,00
	Total TPH	4 samples	235					940		94
	RAD Sampling:			•						
	Gamma Spec.	4 samples	63					252		25
	Gross Alpha	4 samples	32					128		12
	Site Characterization - Sampling and Analysis subtotal this page	l	<u> </u>	<u> </u>						30,95

Rev 10	-96	
Page	18 of	38

Project	OU 4 - 13 Waste Area Group (WAG) 4 FS Cost Estimates

Excavate, Cement Stabilization Treatment & On Site Disposal

Central Facilities Area (CFA) - 10: Transformer Yard O# Spills

Alternative #3A

Type of Estimate: Planning File No: 3954 - D

Date: 01/28/99
Prep'd By: J. R. Baker

ACCT.	DESCRIPTION	QUANTITY	MAT'L UT	LBR/EQP	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	cost	COST
	Site Characterization - Sampling and Analysis subtotal previous page									30,956
	RAD Sampling cont									
	Alpha Spec.	4 samples	652					2,608		2,608
	Beta Analysis	4 samples	85					340		340
	Inorganic Sampling:	·								
	Cyanides	4 samples	30					120		120
	Total Metals	4 samples	925					3,700		3,700
	Prep for Total Metals	4 samples	66					264		264
	Anions	4 samples	105					420		420
	Prep for Anions	4 samples	50					200		200
	pH	4 samples	18					72		72
	Total Pb w/ Prep	4 samples	63					252		252
	Sample Collection During Excavation -	0.10 months		172.00	17	50	860			860
	includes labels, shipping, documentation, etc.									
	Soil Characterization 🤁 1 per 10 cuyd									
	Total Pb	16 samples	63					1,008		1,008
	Site Verification Sampling: assume min. of 3 samples per site; max o	f 1 sample per 100 sqft (	of site area.							
	Total Pb	87 samples	63					5,481		5,481
	Sample Collection - includes labels, shipping, documentation, etc.	87 samples		0.50	44	50	2,175			2,175
				-						
	Data Validation Based Upon 10% of the Sampling Cost	48,456 sample\$	0.1	•				4,846		4,846
	Handling (5%), G&A(27%), PIF (4.5%) & Procurrent (2.5%)	53,302 total\$	0.4283					22,829		22,829
	Site Characterization - Sampling and Analysis									76,000
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Page	19 of	38

Project	OU 4 - 13 Waste Area Group (WAG) 4 FS Cost Estimates	

Excavate, Cement Stabilization Treatment & On Site Disposal

Central Facilities Area (CFA) - 10: Transformer Yard Oil Spills

Alternative #3A

Type of Estimate: Planning File No: 3954 - D

 Date:
 01/28/99

 Prep'd By:
 J. R. Baker

ACCT.	DESCRIPTION	QUANTITY	MAT'L UT	LBR/EQP	LBR/EQP	LBRVEQP	LBR/EQP	MATL	OTHER	TOTAL	
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST	
	Construction Subcontract - (to begin in the year 2000)									•	
	Excavation of Soils	161 cuyd		0.035	5.64	150	845			845	
	Cement Stabilization - for small vol. Use max, number	161 cuyd	128					20,608		20,608	
	Disposal of Treated Materials in ICDF	27 truckload		3	81	55	4,428			4,428	
	note: treated materials assume a volume increase of 2x										
	Disposal Cost for Stabilized Mat'ls 19 the IDCF - see GFE costs	322 cuyd	GFE							<del></del>	
	Note: ref. WAG 3 FS Appendix E										
	Unit prices for the cement stabilization include the loader and forklift equipment, stainless steel above ground waste water holding tank, open top steel tank, cement and admixture products,										
	mixer, belt feeder, 50 cuyd per hour batch plant, dust collection, pum									• • •	
	an average price range would be between \$58 and \$128 per cuyd.										
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				<u></u>				4 040		4.04	
	Import & Place .5' avg. Fill to Level Site - imported mat'ls on INEEL	161 cuyd	10					1,610		1,610	
	Revegetate Site	8,700 sqft	0.04					348		348	
										<u>.</u>	
	Mobilization/Demobilization @ 3% of above construction cost	27,839 const\$	0.03					835		83	
	Training's	8 person		24	<del> </del>	35	6,720			6,720	
	Project Supervision	6 months		170	1,020	40	40,800			40,800	
	Project Support Personnel - Safety & IH	6 months	<u> </u>	340	2,040	35	71,400		ļļ.	71,400	
	Construction Subcontract Subtotal this page	*	. '							147,594	

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Project	OU 4 - 13 Waste Area Group (WAG) 4 FS Cost Estimates	

Central Facilities Area (CFA) - 10: Transformer Yard Oil Spills

Type of Estimate: Planning File No: 3954\_D

Date: 01/28/99

Alternative #3A

Prep'd By: J. R. Baker

Excavate, Cement Stabilization Treatment & On Site Disposal

ACCT.	DESCRIPTION	QUANTITY	MAT'L UT.	LBRÆQP	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	Construction Subcontract Subtotal previous page									147,594
	Project Booties, Gloves, Masks, Signage, etc	1 lot	5000					5,000		5,000
	Total Construction Subcontract Direct Cost									153,000
	Construction Subcontract Overhead and Profit @ 30%									45,900
	Total Construction Subcontract Direct and Indirect Cost									199,000
	GFE Disposal Cost of Materials @ the ICDF	322 cuyd	104					33,488		33,488
	Procurement Fees @ 2.5%		]		l					5,812
	G&A and PIF Fee Allowance @ 33%								_	76,721
	Construction Subcontract & GFE - Total Amount		1							315,000
	Project/Construction Management Allowance									
	Project/Construction Management @ 22.06% of Const. Subcon	tract Cost								44,000
	Project/Construction Management Allowance			ļ	ļ					44,000
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### DETAILED COST ESTIMATE (CONT.SHEET)

Page	21	Λf	38

Project	OU 4 - 13 Waste Area Group (WAG) 4 FS Cost Estimates	
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Central Facilities Area (CFA) - 10: Transformer Yard Oil Spills

Alternative #3A

Excavate, Cement Stabilization Treatment & On Site Disposal

Type of Estimate: Planning File No: 3954 : D

Date: 01/28/99
Prep'd By: J. R. Baker

ACCT.	DESCRIPTION	QUANTITY		LBRVEQP	L.BR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	Remedial Action - Operations (100 Year Duration)		<u> </u>					_	1	
	Program Management		<u> </u>					<u> </u>		
	Coordination/Oversight of Technical Support	N/A	1				<del></del>			N/A
	Coordination with Agency Participants	N/A	<u> </u>							N/A
	Cost and Schedule Control	N/A	<u> </u>						<u> </u>	N/A
	Ensure Compliance of Gov't Regulation	N/A								N/A
	Reviews	N/A_	<u> </u>							N/A
	Audit Preparation and Coordination	N/A						<u> </u>		N/A
	Annual Operations and Maintenance Reports	N/A								N/A
	Total Cost (Per Year)		<u> </u>							N/A
	Program Management Costs - 100 Year Duration	100 years	N/A				<u> </u>		<u> </u>	N/A
			<u> </u>						<u> </u>	
			<del> </del>	ļ				·	<del>                                     </del>	
	Continued CFA Caretaker/Maintenance									
	Caretaker	N/A								N/A
	Fencing Maintenance	N/A	<u> </u>	<u> </u>			···			N/A
	Continued CFA Caretaker/Maintenance Cost Per Year		†							N/A
	Caretaker Cost - 100 Year Duration	100_years	N/A							N/A
			<del> </del>					<u></u>	-	
	Operations, Maintenance, Materials and Disposal	N/A	<del> </del>	-						N/A
			<u> </u>						1	
	D&D of Facilities	N/A	<del> </del>	<del></del>	ļI				<del>                                     </del>	NA
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OU 4 - 13 Waste Area Group (WAG) 4 FS Cost Estimates  Central Facilities Area (CFA) - 10: Transformer Yard Oil Spills	Type of Estimate: Planning	File No: <u>3954 - D</u>	Date:	01/28/99
Alternative #3A			Prep'd By:	J. R. Baker
Excavate, Cement Stabilization Treatment & On Site Disposal				

ACCT.	DESCRIPTION	QUANTITY	MAT'L UT.	LBR/EQP	LBR/EQP	LBRVEQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST		TOTAL HRS	RATE	cost	COST	COST	COST
	Surveillance and Monitoring (annual sampling & monitoring activities)	· Assumes groundwate	r monitoring							
				<u> </u>						
	Ground Water Sampling/Monitoring, Maint. Insp./Report	N/A								N/A
	5-Year Review Report	N/A								N/A
	Surveillance and Monitoring Costs - 100 Year Duration								İ	NA
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### DETAILED COST ESTIMATE (CONT.SHEET)

Page	23 of	38

Project	OU 4 - 13 Waste Area Group (WAG) 4 FS Cost Estimates	
	Central Facilities Area (CFA) - 10: Transformer Yard Oil Spills	

Alternative #3B

Excavate, Off Site Treatment & Disposal

Type of Estimate: Planning File No: 3954 - D

Date: <u>01/28/99</u>
Prep'd By: J. R. Baker

ACCT.	DESCRIPTION	QUANTITY	MAT'L UT.	LBR/EQP	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	FFA/CO Management and Oversight									
	Program Management									
	Coordination/Oversight of Technical Support	1 person	ļ	640	640	75	48,000			48,000
	Coordination with Agency Participants	1 person	<u> </u>	320	320	75	24,000			24,000
	Cost and Schedule Control	1 person		320	320	65	20,800			20,800
	Ensure Compliance of Gov't Regulation	1 person		160	160	70	11,200			11,200
	Quarterly and Yearly Reviews	1 person		160	160	65	10,400			10,400
	Audit Preparation and Coordination	1 person	<u> </u>	160	160	65	10,400			10,400
	Total Cost (Per Year)									124,800
	Total Cost (Per Year Rounded)		ļ. <u></u>	<u> </u>						125,000
	Program Management25 year duration during the design stages,	1.75 year	125,000					218,750		219,000
	.5 year duration during the construction period and a 1 year duration a	fter.								
	RA Document Preparation									
	RD/RA SOW									
	PreDesign Studies/Preliminary Scoping	3 person		80	240	75	18,000			18,000
	Design Criteria	1 person		40	40	75	3,000			3,000
	RD/RA SOW Preparation	1 person		80	80	75	6,000			6,000
	Reviews and Comment Resolution	1 person	<u> </u>	360	360	75	27,000			27,000
	RD/RA SOW Cost									54,000
		<u> </u>								
			<u> </u>							
	RA Workplan		<b>L</b>							
	Preliminary Scoping	1 person		160	160	75	12,000			12,000
	RD/RA SOW Work Plan	1 person		260	260	75	19,500			19,500
	Reviews and Comment Resolution	1 person		420	420	75	31,500			31,500
	RA Workplan Cost									63,000
			,	·						

# DETAILED COST ESTIMATE (CONT.SHEET)

Page 24 of 38
Project OU 4 - 13 Waste Area Group (WAG) 4 FS Cost Estimates

Central Facilities Area (CFA) - 10: Transformer Yard Off Spills	Type of Estimate: Planning	File No: 3954 - D	Date:	01/28/99
Alternative #3B			Prep'd By:	J. R. Baker
Excavate, Off Site Treatment & Disposal				

ACCT.	DESCRIPTION	QUANTITY	MAT'L UT.		LBR/EQP	LBR/EQP	LBR/EQP	MATL	OTHER	TOTAL
Š		UNIT	COST	UNIT HAS	UNIT HRS TOTAL HRS	RATE	COST	COST	COST	COST
	RA Document Preparation (cont.)									
	Packaging, Shipping, Transportation Documentation Cost-									
	Sampling and Analysis	1.0 person		240	240	75	18,000			18,000
	Hazard Classification	1.0 person		200	200	75	15,000			15,000
	Selection and Procurement of Packaging	1.0 person		08	08	75	000'9			000'9
	Reviews and Comment Resolution	1.0 person		520	520	75	39,000			39,000
	Packaging, Shipping, Transportation Documentation Cost									000'81
	Remedial Action Report									
	RA Report Preparation	1 person		320	320	22	24,000			24,000
	Reviews and Comment Resolution	1 person		320	320	75	24,000			24,000
	Remedial Action Report Cost									000'87
	WAG-Wide RA 5 Yr. Review									
	5 Year Review Preparation	N/A								NA
	Reviews and Comment Resolution	N/A								NA
	WAG-Wide RA 5 Yr. Reviews									N/A
									,	
	RD Document Preparation							-		
	Safety Analysis Documentation (ASA & HSP)									
	Auditable Safety Analysis/Hazards Classification	2 person		160	320	75	24,000			24,000
	Unresolved Safety Questions	2 person		160	320	75	24,000			24,000
	Quality Assurance	1 person		. 30	30	75	2,250			2,250
	Reviews and Comment Resolution	2 person		335	670	75	50,250			50,250
	Safety Analysis Documentation Cost									100,500
			•	~						

Excavate, Off Site Treatment & Disposal

Rev 10-96

## DETAILED COST ESTIMATE (CONT.SHEET)

 Date:
 01/28/99

 Prep'd By:
 J. R. Baker

Page 25 of 38	Page	25 of	38
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Project	OU 4 - 13 Waste Area Group (WAG) 4 FS Cost Estimates			
	Central Facilities Area (CFA) - 10: Transformer Yard Oii Spills	Type of Estimate: Planning	File No: <u>3954 - D</u>	
	Alternative #3B			

CT.	DESCRIPTION	QUANTITY	MAT'L UT.	LBR/EQP	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
).		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	Sampling and Analysis Plan									
	Preliminary Scoping	1 person	ļ <u>.</u>	320	320	75	24,000			24,000
	Field Sampling Plan Preparation	1 person		400	400	75	30,000			30,000
	Reviews and Comment Resolution	1 person		720	720	75	54,000			54,000
	Sampling and Analysis Plan Cost									108,000
	RD Document Preparation (cont.)									
	Pre-Final Inspection Report									
	Checklist Preparation	1 person		40	40	75	3,000			3,000
	Reviews and Comment Resolution	1 person		60	60	75	4,500			4,50
	Pre-Final Inspection Report Cost									7,500
		·							·	l
	Remedial Design									
	Added Institutional Controls - 5 Yr. Review of Deed Restrictions	with Governing Bodies and P	ublic Comm	ent					- 11	
	Legal Attorney and Env. Affairs at \$10K ea.									N/A
	Total Added Institutional Controls									N/A
			<del>                                     </del>							<u> </u>
	Title Design Construction Document Package									
	Remedial Design and Work Plan	1 person		40	40	75	3,000			3,000
	Siting and Surveying	1 lot		20	20	75	1,500			1,50
	Review and Revise Final Design	10 drwngs	2000					20,000		20,00
-	Final Design of Construction Package	10 drwngs	3500					35,000		35,00
	Title Design Construction Document Package		T							60,00

## DETAILED COST ESTIMATE (CONT.SHEET)

Page 26 of 38

Project	OU 4 - 13 Waste Area Group (WAG) 4 FS Cost Estimates	

Central Facilities Area (CFA) - 10: Transformer Yard Oil Spills

Alternative #3B

Excavate, Off Site Treatment & Disposal

Type of Estimate: Planning File No: 3954 - D

Date: 01/28/99

ACCT.	DESCRIPTION	QUANTITY	MAT'L UT	LBR/EQP	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	Remedial Action -									ļ <u>.</u>
	Site Characterization - Sampling and Analysis		<u> </u>							
	note: excavation volume = 8,700 sqft of site area x .5 ft of excavation	on depth/27 cuft/cuyd = 1	61 cuyos.							
	assuming excavation equals 30 cuyds per hour then 161 cuyds/30	cuyds per hour = 6 crew	hours							
	Site Area	8,700 sqft							•	for information on
	Soli Volume	161 cuyd								for information on
	Excavation Duration	0.10 months								for information on
	SMO - Sample Prep, SOW, Analysis of Data, Tracking, etc.	1 year		120	120	100	12,000			12,000
	Characterization of extent: assume min. of 10 samples per site; max	of 1 sample per 100 sqf	t of site area							
	Total Pb	87 samples	63					5,481		5,48
	Sample Collection - includes labels, shipping, documentation, etc.	87 samples		0.50	44	50	2,175			2,17
	Off Site Soil Respository Waste Acceptance Criteria (WAC) - 4 samp	oles per site								
	Organic Sampling:			<u> </u>						ļ
	VOC 's	4 samples	160		ļ_ <b>.</b>			640		64
	SVOC's	4 samples	320					1,280		1,28
	Pesticides	4 samples	120					480		48
	TCLP Metals	4 samples	925					3,700		3,70
	TCLP VOC's	4 samples	150					600		60
	TCLP SVOC's	4 samples	200					800		80
	TCLP Pesticides	4 samples	120					480		48
	PCB's	4 samples	500					2,000		2,00
	Total TPH	4 samples	235					940		94
	RAD Sampling:		<u> </u>							
	Gamma Spec.	4 samples	63		ļ			252		25
	Gross Alpha	4 samples	32					128		12
	Site Characterization - Sampling and Analysis subtotal this page			€.						30,95

### DETAILED COST ESTIMATE (CONT.SHEET)

Page 27 of 38

roject	OU 4 - 13 Waste Area Group (WAG) 4 FS Cost Estimates	 _

Central Facilities Area (CFA) - 10: Transformer Yard Oil Spills

Alternative #3B

Excavate, Off Site Treatment & Disposal

Type of Estimate: Planning

File No: 3954 - D

Date: 01/28/99

ACCT.	DESCRIPTION	QUANTITY	MAT'L UT		LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	Site Characterization - Sampling and Analysis subtotal previous page									30,956
	RAD Sampling cont									
	Alpha Spec.	4 samples	652					2,608		2,608
	Beta Analysis	4 samples	85		<u></u>			340		340
	Inorganic Sampling:									
	Cyanides	4 samples	30					120		120
	Total Metals	4 samples	925					3,700		3,700
	Prep for Total Metals	4 samples	66					264		264
	Anions	4 samples	105					420		420
	Prep for Anions	4 samples	50					200		200
	рН	4 samples	18					72		72
	Total Pb w/ Prep	4 samples	63					252		252
<del></del>										
	Sample Collection During Excavation -	0.10 months		172.00	17	50	860			860
	includes labels, shipping, documentation, etc.									
	Soll Characteriztion @ 1 per 10 cuyd									
	Total Pb	16 samples	63					1,008		1,008
	Site Verification Sampling: assume min. of 3 samples per site; max of	f 1 sample per 100 sqft	of site area.							
	Total Pb	87 samples	63					5,481		5,481
-	Sample Collection - includes labels, shipping, documentation, etc.	87 samples		0.50	44	50	2,175			2,175
	Data Validation Based Upon 10% of the Sampling Cost	48,456 sample\$	0.1	·				4,846		4,846
	Handling (5%), G&A(27%), PIF (4.5%) & Procument (2.5%)	53,302 total\$	0.4283					22,829		22,829
	Site Characterization - Sampling and Analysis							-		76,000
				1	1					

### DETAILED COST ESTIMATE (CONT.SHEET)

Page 28 of 38

rolect	OU 4 - 13 Waste Area Grou	p (WAG) 4 FS Cost Estimates
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Excavate, Off Site Treatment & Disposal

Central Facilities Area (CFA) - 10: Transformer Yard Oil Spills Alternative #3B

Type of Estimate: Planning

File No: 3954 - D

Date: 01/28/99

ACCT.	DESCRIPTION	QUANTITY UNIT	MAT'L UT	LBR/EQP	LBRÆQP TOTAL HRS	LBR/EQP RATE	LBR/EQP COST	MAT'L COST	OTHER COST	TOTAL COST
NO.	Construction Subcontract - (to begin in the year 2000)	UNIT	COST	ONIT HIS	TOTALTING	HAIL	0081	0001	0001	0001
	Excavation of Soils	161 cuyd		0.035	5.64	150	845			845
	Mobilization of Government Leased 74 cuyd rail gondolas to	2 railcars	GFE		ļ					
	the INEEL for shipment of soils.	Z lalicais_	GrE						· <del></del>	
	Load, Ship & Return (railcars) to the an approved	2 railcars	GFE	4	9	150	1,305			1,305
	RCRA Off Site Facility for disposal using 74 cuyd railcars.	L Miloto	<u> </u>				.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
•										
	Treatment and Disposal of Soil - assumed to meet LLW criteria	161 cuyd	GFE							
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				1						
				1						
	Import & Place .5' avg. Fill to Level Site - imported mat'ls on INEEL	161 cuyd	10		ļ			1,610		1,610
	Revegetate Site	6,700 sqft	0.04	1	<del> </del>			348		348
	Mobilization/Demobilization @ 3% of above construction cost	4,109 const\$	0.03					123		123
	Training's	8 person		· 24	192	35	6,720			6,720
	Project Supervision	6 months		170	1,020	40	40,800			40,800
	Project Support Personnel - Safety & IH	6 months		340	2,040	35	71,400			71,400
	Construction Subcontract Subtotal this page			(						123,152

### DETAILED COST ESTIMATE (CONT.SHEET)

Page	29 of	3
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Prolect	QU 4 -	13 Waste Area	Group (WAG	) 4 FS Cost Estimate
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Central Facilities Area (CFA) - 10: Transformer Yard Oil Spills

Alternative #3B

Excavate, Off Site Treatment & Disposal

Type of Estimate: Planning File No: 3954 - D

Date: 01/28/99

CCT.	DESCRIPTION	QUANTITY	MAT'L UT.	LBR/EQP	LBR/EQP	LBRÆQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.	<u> </u>	UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	cost	COST
	Construction Subcontract Subtotal previous page									123,152
	Project Booties, Gloves, Masks, Signage, etc.	1 lot	5000	<u> </u>				5,000		5,000
	Total Construction Subcontract Direct Cost									128,000
	Construction Subcontract Overhead and Profit © 30%	<del> </del>				- 1				38,400
	Total Construction Subcontract Direct and Indirect Cost	——————————————————————————————————————								166,000
	GFE Disposal:									
	Mobilization of Government Leased 74 cuyd rail gondolas to	2 railcars	6000					13,054		13,054
	the INEEL for shipment of soils.									
	Load, Ship & Return (railcars) to the an approved	2 railcars	6000					13,054		13,054
	RCRA Off Site Facility for disposal using 74 cuyd railcars.									
	Disposal of Soil	161 cuyd	285					45,885		45,885
	GFE Disposal Cost									72,000
	Procurement Fees © 2.5%									5,950
	G&A and PIF Fee Allowance @ 33%									78,540
_	Construction Subcontract & GFE - Total Amount			<u> </u>						322,000
	Project/Construction Management Allowance									· · · <del>- ·</del>
	Project/Construction Management @ 22.06% of Const. Subcontract Co	ost								36,620
	Project/Construction Management Allowance	<u>-</u>		_						37,000
		<del></del>								
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## DETAILED COST ESTIMATE (CONT.SHEET)

Page	30 o	f 38
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Project	OU 4 - 13 Waste Area Group (WAG) 4 FS Cost Estimates	

Excavate, Off Site Treatment & Disposal

Central Facilities Area (CFA) - 10: Transformer Yard Oil Spills

Alternative #3B

Type of Estimate: Planning File No: 3954 - D

Date: 01/28/99
Prep'd By: J. R. Baker

ACCT.	DESCRIPTION	QUANTITY	MAT'L UT.	LBR/EQP	LBR/EQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	Remedial Action - Operations (100 Year Duration)									
	Program Management									
	Coordination/Oversight of Technical Support	N/A_								N/A
	Coordination with Agency Participants	N/A								N/A
	Cost and Schedule Control	N/A								N/A
	Ensure Compliance of Gov't Regulation	N/A								N/A
	Reviews	N/A								N/A
	Audit Preparation and Coordination	N/A								N/A
	Annual Operations and Maintenance Reports	N/A								N/A
	Total Cost (Per Year)				ļ					N/A
	Program Management Costs - 100 Year Duration	100 years	N/A					ļ		N/A
				ļ <u>.</u>						
									ļ. <u>.</u>	
	Continued CFA Caretaker/Maintenance									
	Caretaker	N/A								N/A
	Fencing Maintenance	N/A								N/A
								<u> </u>		N/A
	Continued CFA Caretaker/Maintenance Cost Per Year		N/A		<del> </del>			<del></del>		N/A
	Caretaker Cost - 100 Year Duration	100 years	INVA		-					IVA
	Operations, Maintenance, Materials and Disposal	N/A	-						<del> </del>	N/A
	<u> </u>		-		<del> </del>				-	
				· ·						
	D&D of Facilities	N/A								N/A
				[						

Alternative #3B

Excavate, Off Site Treatment & Disposal

### DETAILED COST ESTIMATE (CONT.SHEET)

Type of Estimate: Planning

Page	31	of	38

Project	OU 4 - 13 Waste Area Group (WAG) 4 FS Cost Estimates
	Central Facilities Area (CFA) - 10: Transformer Yard Oil Spills

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File No: 3954 - D

Date: 01/28/99

ACCT.	DESCRIPTION	QUANTITY		LBRVEQP			LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	Surveillance and Monitoring (annual sampling & monitoring activities	s) - Assumes groundwa	er monitoring	g is not requ	ilred.					
								l		
	Ground Water Sampling/Monitoring, Maint, Insp./Report	N/A	1							N/A
	Court valor datiputs worth the property	1411	1							
	5-Year Review Report	N/A							<u> </u>	N/A
	3-1ear neview nepuit	180	<u> </u>	<del> </del>						
•	Surveillance and Monitoring Costs - 100 Year Duration									N/A
	Survey and monitoring obtained the survey of							· · · · · · · · · · · · · · · · · · ·		
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## DETAILED COST ESTIMATE (CONT.SHEET)

Page 32 of 38
Project OU 4 - 13 Waste Area Group (WAG) 4 FS Cost Estimates
Central Facilities Area (CFA) - 10. Transformer Yard Oil Spills

Alternative #4
Containment with ET - Type Cap Cover

Type of Estimate: Planning

File No: 3954 - D

Date: 01/28/99 Prep'd By: J. R. Baker

ACCT.	DESCRIPTION	QUANTITY	MAT'L UT.	LBR/EQP	LBRVEOP	LBRÆQP	LBR/EQP	MATIL	OTHER	TOTAL
<u>.</u>		LIND	COST	UNIT HRS	UNIT HRS TOTAL HRS	RATE	COST	COST	COST	COST
	FFA/CO Management and Oversight									
	Program Management									
ļ	Coordination/Oversight of Technical Support	1 person		640	640	75	48.000			48,000
	Coordination with Agency Participants	1 person		320	320	75	24.000			24 000
	Cost and Schedule Control	1 person		320	320	5	20.800			2000
	Ensure Compliance of Gov't Regulation	1 Derson		160	9	2	000 11			000'02
	Quarterly and Yearly Reviews	1 person		160	2 9	142	10.400			007.11
	Audit Preparation and Coordination	1 person		160	19	i i	10 400			00,400
	Total Cost (Per Year)						20.52			90,52
	Total Cost (Per Year Rounded)									000 301
	Program Management25 year duration during the design stages,	1.75 vear	125.000					218 750		000,010
	.5 year duration during the construction period and a 1 year duration after					-		2001		0000
	RA Document Preparation					-				
	RD/RA SOW									
	PreDesign Studies/Preliminary Scoping	3 person		08	240	75	18.000			18 000
	Design Criteria	1 person		ę	\$	75	3,000			9000
	RD/RA SOW Preparation	1 person		8	8	75	000 9			900
	Reviews and Comment Resolution	nosison 1		360	360	K	27,000		<del> </del>	000'5
	RD/RA SOW Cost									000,12
						†			1	000,40
						+			-	
					<del> -</del>		+-		-	
	RA Workplan									
	Preliminary Scoping	1 person		160	160	75	12.000			12 000
	RD/RA SOW Work Plan	uosied i		. 260	260	75	19.500			10 500
	Reviews and Comment Resolution	1 person		420	420	25	31,500			31.500
	RA Workplan Cost					-			<del> </del>	63 000
			•	-	<del>                                     </del>					*******
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Rev 10-96

Page 33 of 38

roject	OU 4 - 13 Waste Area Group (WAG) 4 FS Cost Estimates	
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Central Facilities Area (CFA) - 10: Transformer Yard Oil Spills
Alternative #4

Containment with ET - Type Cap Cover

Type of Estimate: Planning

File No: 3954 - D

Date: 01/28/99

Ŧ.	DESCRIPTION	QUANTITY	1		LBR/EQP	LBR/EQP	LBR/EQP	MATL	OTHER	TOTAL
		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	RA Document Preparation (cont.)		<u> </u>							
	Packaging, Shipping, Transportation Documentation Cost									
	Sampling and Analysis	N/A							1	N/A
	Hazard Classification	N/A	ļ							N/A
	Selection and Procurement of Packaging	N/A	<u> </u>							N/A
	Reviews and Comment Resolution	N/A	<u> </u>							N/A
	Packaging, Shipping, Transportation Documentation Cost								-	N/A
	Remedial Action Report									
	RA Report Preparation	1 person	<u> </u>	320	320	75	24,000			24,00
	Reviews and Comment Resolution	1 person		320	320	75	24,000			24,00
	Remedial Action Report Cost									48,00
	WAG-Wide RA 5 Yr. Review - (Cost Per Each, Required (1/4) FTE		TE in (5) Yr.						<del>                                     </del>	
	5 Year Review Preparation	23 years	<del> </del>	350	8,050	<del></del>	603,750		<del> </del>	604,00
	Reviews and Comment Resolution	23 years	<del>                                     </del>	120	2,760	75	207,000		- 1	207,00
	WAG-Wide RA 5 Yr. Reviews For 100 Years									811,00
	RD Document Preparation									
	Safety Analysis Documentation (ASA & HSP)		<u> </u>							
	Auditable Safety Analysis/Hazards Classification	2 person		160	320	75	24,000		ļ <b>!</b>	24,00
	Unresolved Safety Questions	2 person		160	320	75	24,000			24,00
	Quality Assurance	1 person		30	30	75	2,250			2,25
	Reviews and Comment Resolution	2 person	<u> </u>	335	670	75	50,250			50,25
	Safety Analysis Documentation Cost			1						100,50
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Page 34 of 38

Project	OU 4 - 13 Waste Area Group (WAG) 4 FS Cost Estimates	

Central Facilities Area (CFA) - 10: Transformer Yard Oil Spills

Alternative #4

Containment with ET - Type Cap Cover

Type of Estimate: Planning File No: 3954 - D

Date: 01/28/99

ACCT.	DESCRIPTION	QUANTITY	MAT'L UT.	LBR/EQP	LBR/EQP	LBRVEQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	Sampling and Analysis Plan									
	Preliminary Scoping	1 person		320	320	75	24,000			24,000
	Field Sampling Plan Preparation	1 person		400	400	75	30,000			30,000
	Reviews and Comment Resolution	1 person	<u> </u>	720	720	75	54,000			54,000
	Sampling and Analysis Plan Cost									108,000
	RD Document Preparation (cont.)									
	Pre-Final Inspection Report		ļ							
	Checklist Preparation	1 person		40	40	<del>                                     </del>	3,000			3,000
	Reviews and Comment Resolution	1 person		60	60	75	4,500			4,500
	Pre-Final Inspection Report Cost		-	<u> </u>						7,500
	Remedial Design					<u> </u>				
	Added Institutional Controls - 5 Yr. Review of Deed Restrictions	with Governing Bodies and P	ublic Comm							
	Legal Attorney and Env. Affairs at \$10K ea.	2 person		160	100	100	10,000			10,000
	Total Added Institutional Controls - 100 Year Duration	20 each	10,000							200,000
	Title Design Construction Document Package									
	Remedial Design and Work Plan	1 person		40	•		3,000			3,000
	Siting and Surveying	1 lot	1	20	20	75	1,500			1,500
	Review and Revise Final Design	10 drwngs	2000	1				20,000		20,000
	Final Design of Construction Package	10 drwngs	3500					35,000		35,000
	Title Design Construction Document Package									60,000
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Rcv 10-96

Page 35 of 38

Project	OU 4 - 13 Waste Area Group (WAG) 4 FS Cost Estimates	
	Control Equilibra Area (CEA) - 10: Transformer Yard Oil Spille	

Alternative #4

Containment with ET - Type Cap Cover

Type of Estimate: Planning File No: 3954 - D

Date: <u>01/28/99</u>
Prep'd By: <u>J. R. Baker</u>

ACCT.	DESCRIPTION	QUANTITY	MAT'L UT.		LBRVEQP	LBR/EQP	LBR/EQP	MATL	OTHER	TOTAL
NO.		UNIT	COST	UNIT HAS	TOTAL HRS	RATE	COST	COST	COST	COST
	Remedial Action -									ļ <u></u>
	Site Characterization - Sampling and Analysis									
	SMO - Sample Prep, SOW, Analysis of Data, Tracking etc.	1 year		120	120	100	12,000			12,000
	Total Pb w/ Prep (1 sample per 100 sqft) - 10 samples min.	87 sample	63					5,481		5,481
	Sample Collection - includes labels, shipping, documentation, etc.	87 samples	-	0.50	44	50	2,175			2,175
	Data Validation Based Upon 10% of the Sampling Cost	19,656 sample\$	0.1					1.966		1.966
	Handling (5%), G&A(27%), PIF (4.5%) & Procurrent (2.5%)	21,622 total\$	0.4283	<del> </del>				9,261		9,261
	Site Characterization - Sampling and Analysis									31,000
										<del>                                     </del>
·	Construction Subcontract - (to begin in the year 2000)									<del></del>
-	Clear and Grub Site	12,000 sqft	0.05					600		600
	Excavation of Perimeter Gravel Drain System	250 cuyd	8					2,000		2,000
	Install Gravel for Drain	250 cuyd	35					8,750		8,750
	Install Perimeter Drain Piping	400 Inft	18					7,200		7,200
	Install Geotextile Layer	1,000 sqyd	9					9,000		9,000
	import & Place 10' avg. Fill to Level Site - imported mat'ls on INEEL	3,222 cuyd	. 8					25,776		25,776
	Import & Place 24" Cobble Layer - imported mat'ls from Idaho Falls	650 cuyd	25					16,250		16,250
	Import & Place 6" Gravel Layer - imported mat'ls from Idaho Falls	165 cuyd	35					5,775		5,775
	Import & Place 4.1' Soil Layer - imported mat'ls on INEEL	1,400 cuyd	8					11,200		11,200
	Import & Place 6" Gravel Mulch - Imported mat'ls from Idaho Falls	165 cuyd	40					6,600		6,600
	Misc. Revegetation & Reclaimation	12,000 sqft	0.05					600		600
	Install Perimeter Fencing w/ Gates and Signage	500 Inft	20					10,000		10,000
	Mobilization/Demobilization @ 3% of above construction cost	103,751 const\$	0.03					3,113		3,113
	Training's	8 person		- 24	192	35	6,720			6,720
	Project Supervision	6 months		170	1,020	40	40,800			40,800
	Project Support Personnel - Safety & IH	6 months		340	2,040	35	71,400			71,400
	Construction Subcontract Subtotal this page			4						225,784

Rev 10-96

Page	36	~4	38
Page -	.10	oı	38

Project OU 4 - 13 Waste Area Group (WAG) 4 FS Cost Estim	nates
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Central Facilities Area (CFA) - 10: Transformer Yard Oil Spills

Alternative #4

Containment with ET - Type Cap Cover

Type of Estimate: Planning

File No: 3954 - D

Date: 01/28/99

ACCT.	DESCRIPTION	QUANTITY	MAT'L UT.	1	LBRVEQP	LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	Construction Subcontract Subtotal previous page									225,784
	Project Booties, Gloves, Masks, Signage, etc	1 lot	5000					5,000		5,000
-	Construction Surveying and Staking	2 months		170	340	95	32,300			32,300
ſ	Total Construction Subcontract Direct Cost								-	263,000
	Construction Subcontract Overhead and Profit @ 30%									78,900
	Total Construction Subcontract Direct and Indirect Cost			<u> </u>						342,000
	Procurement Fees <b>©</b> 2.5%									8,550
****	G&A and PIF Fee Allowance 6 33%									112,860
	Construction Subcontract - Total Amount				ļ					463,000
				ļ						
	Project/Construction Management Allowance			<u> </u>						
	Project/Construction Management @ 22.06% of Const. Subcontract C	Cost								75,000
	Project/Construction Management Allowance									75,000
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Page	37 of	38

Project	QU 4 - 13 Waste Area Group (WAG) 4 FS Cost Estimates	

Central Facilities Area (CFA) - 10: Transformer Yard Oil Spills

Alternative #4

Containment with ET - Type Cap Cover

Type of Estimate: Planning File No:

File No: 3954 - D

Date: 01/28/99

ACCT.	DESCRIPTION	QUANTITY	MATL UT.	LBR/EQP	LBR/EQP	LBR/EQP	LBR/EQP	MATL	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	Remedial Action - Operations (100 Year Duration)									
	Program Management									
	Coordination/Oversight of Technical Support	1 person	<u> </u>	200	200	75	15,000			15,000
	Coordination with Agency Participants	1 person		80	80	75	6,000			6,000
	Cost and Schedule Control	1 person	ļ	59	59	65	3,848			3,848
	Ensure Compliance of Gov't Regulation	1 person		32	32	70	2,240			2,240
	Reviews	1 person		32	32	65	2,080			2,080
	Audit Preparation and Coordination	1 person	<u> </u>	32	32	65	2,080			2,080
	Annual Operations and Maintenance Reports	1 person	<u> </u>	40	40	65	2,600			2,600
_	Total Cost (Per Year)			,					i	33,850
	Program Management Costs - 100 Year Duration	100 years	33,850					3,385,000		3,385,000
			<u> </u>							
			<u> </u>	<u> </u>						
			<u> </u>	<u> </u>						
	Continued CFA Caretaker/Maintenance						1			
	Caretaker	1 person	<u> </u>	188	188	75	14,100			14,100
	Fencing Maintenance	500 Inft	1					500		500
	Cap Maintenance	8,700 sqft	0.04	<u> </u>				348		348
	Continued CFA Caretaker/Maintenance Cost Per Year									14,950
	Caretaker Cost - 100 Year Duration	100 years	14,950					1,495,000		1,495,000
	Operations, Maintenance, Materials and Disposal	N/A								N/A
									j	
				-						
	D&D of Facilities	N/A								N/A
				ť						

### DETAILED COST ESTIMATE (CONT.SHEET)

88 of 38
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Project	OU 4 - 13 Waste Area Group (WAG) 4 FS Cost Estimates
	Control Employee Aven (CEA) 10, Tempolograph Vand Oil Spills

Central Facilities Area (CFA) - 10: Transformer Yard Oil Spills

Alternative #4

Containment with ET - Type Cap Cover

Type of Estimate: Planning

File No: 3954 - D

Date: 01/28/99

ACCT.	DESCRIPTION	QUANTITY		LBR/EQP		LBR/EQP	LBR/EQP	MAT'L	OTHER	TOTAL
NO.		UNIT	COST	UNIT HRS	TOTAL HRS	RATE	COST	COST	COST	COST
	Surveillance and Monitoring (annual sampling & monitoring activities) - Assumes groundwater monitoring is not required.									
	Ground Water Sampling/Monitoring, Maint. Insp./Report	N/A								N/A
	5-Year Review Report	N/A								N/A
				<u> </u>						
	Surveillance and Monitoring Costs - 100 Year Duration									N/A
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